SEVENTH ADDENDUM

TO THE

BRITISH PHARMACOPŒIA

1932

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THE GENERAL COUNCIL OF
MEDICAL EDUCATION AND REGISTRATION
OF THE UNITED KINGDOM

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NOTICE

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The British Pharmacopœia, 1932, superseded previous issues of the British Pharmacopœia, being for all purposes deemed to be substituted for such previous issues.

The Addendum, 1936, the Second Addendum, 1940, the Third Addendum, 1941, the Fourth Addendum, 1941, the Fifth Addendum, 1942, and the Sixth Addendum, 1943, altered and amended the British Pharmacopœia, 1932, and this Seventh Addendum effects further alterations and emendations. The General Notices and Appendices included in the British Pharmacopœia, 1932, the Addendum, 1936, and subsequent Addenda apply to all matter contained in this Addendum, unless the contrary is specifically stated.

This Addendum has the same authority as the British Pharmacopœia, 1932, as amended by the Addendum, 1936, and subsequent Addenda. Monographs or appendices of the British Pharmacopœia, 1932, or of these Addenda, which are amended by this Seventh Addendum, supersede, in their amended forms, the original monographs or appendices.

NOTICE CONCERNING OINTMENTS

The monographs on certain ointments of the British Pharmacopœia, 1932, or Addenda, are amended by this Addendum, and the formulæ contained herein are now official. The permission to dispense or supply ointments prepared according to alternative formulæ, which was conveyed by the Notice Concerning Ointments in the Sixth Addendum, and continued by Notice in the *London*, *Edinburgh*, *Belfast* and *Dublin Gazettes*, is withdrawn.

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In this Addendum certain drugs have been included notwithstanding the existence of actual or potential patent rights. In so far as such substances are protected by Letters Patent, their inclusion in this Addendum neither conveys, nor implies, licence to manufacture.

PREFACE

TO THE SEVENTH ADDENDUM TO THE BRITISH PHARMACOPŒIA, 1932

SECTION 54 of the Medical Act, 1858, provides that the General Council of Medical Education and Registration of the United Kingdom 'shall cause to be published under their direction a Book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit, to be called "The British Pharmacopœia"; and the General Council shall cause to be altered, amended, and republished, such Pharmacopœia as often as they shall deem it necessary'.

This Addendum to the British Pharmacopœia, 1932, has been prepared by the British Pharmacopœia Commission and approved by the Pharmacopœia Committee of the Council in the discharge of the duty entrusted to them by the Standing Orders of the Council to deal with all matters relating to the preparation and publication of the British Pharmacopœia.

The Pharmacopœia Committee of the Council, in a Report made by it to the Council in accordance with the Standing Orders, has conveyed to the Council a cordial expression of its appreciation of the work done by the Commission in preparing this Addendum; and also by the persons and bodies, both in this country and abroad, by whose collaboration that task has been facilitated.

GENERAL MEDICAL COUNCIL OFFICE,
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LONDON, W.1.

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Additions to the British Pharmacopœia, 1932

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Amphetamina
Amphetaminæ Sulphas
Cyclopropanum
Dextrosum Hydratum
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Liquor Sodii Citratis Anticoagulans
Liquor Sodii Citratis cum Dextroso
Œstradiolis Monobenzoas
Œstronum
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Potassii Sulphas
Progesteronum
Strophanthinum-G
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Sulphadiazina Solubilis
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with effect from November 30th, 1943

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with effect from February 18th, 1944

Extractum Belladonnæ Folii Liquidum

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Belladonnæ Folium
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Unguentum Hydrargyri Ammoniati
Unguentum Sulphuris
Unguentum Zinci Oxidi
Vaccinum Vaccinæ

Monographs of the British Pharmacopœia, 1932, and Addenda, which were amended by Notice in the London, Edinburgh, Belfast and Dublin Gazettes,

with effect from November 30th, 1943

Confectio Sulphuris
Extractum Colchici Liquidum
Mistura Sennæ Composita
Paraffinum Liquidum
Tinctura Colchici
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with effect from February 18th, 1944

Extractum Belladonnæ Liquidum

with effect from June 23rd, 1944

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with effect from July 25th, 1944

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Former Names	New Names
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Extractum Belladonnæ Folii Liquidum	Extractum Belladonnæ Herbæ Liquidum
Insulinum	Injectio Insulini
Tabellæ Glycerylis Trinitratis	Tabellæ Glycerylis Trinitratis
Unguentum Zinci Oxidi	Unguentum Zinci Oxidi Aquosum
Unguentum Zinci Oxidi Anhydrosum	Unguentum Zinci Oxidi

MONOGRAPHS

ACIDUM ACETYLSALICYLICUM

[Acid. Acetylsalicyl.]

Acetylsalicylic Acid

British Pharmacopœia, 1932, pages 17 and 18; delete the **Tests for Purity** and insert:—

Tests for Purity. *Melting-point*, 135° to 138°, the capillary tube containing the specimen being placed in the heating-tube at a temperature about 5° below the melting-point and the rate of rise of temperature being about 3° per minute.

Dissolve 0·5 gramme in 10 millilitres of cold *sulphuric acid*: not more than a faint yellow colour is produced (limit of readily carbonisable substances).

Dissolve 0·2 gramme in 2 millilitres of *alcohol (90 per cent.)* in a Nessler tube and dilute to 50 millilitres with *water*. Place 2 millilitres of *alcohol (90 per cent.)* and 1 millilitre of a freshly prepared 0·01 per cent. w/v solution of *salicylic acid* in *water* in a second Nessler tube, and dilute to 50 millilitres with *water*. Add to the contents of each tube 1 millilitre of *acid solution of ferric ammonium sulphate*, mix, allow to stand for one minute, and compare the colours; the violet colour in the first tube is not deeper than that in the second (limit of salicylic acid).

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Leaves, on incineration, not more than 0·05 per cent. of residue.

AMETHOCAINÆ HYDROCHLORIDUM

[Amethocain. Hydrochlor.]

Amethocaine Hydrochloride

Synonym. Tetracaine Hydrochloride.

$C_4H_9NH{\cdot}C_6H_4{\cdot}CO_2{\cdot}CH_2{\cdot}CH_2{\cdot}N(CH_3)_2{,}HCl$ Mol. Wt. 300·67

Amethocaine Hydrochloride is the hydrochloride of the *p*-*n*-butylaminobenzoic ester of *β*-dimethylaminoethanol, which may be prepared by esterifying *β*-dimethylaminoethanol with *p*-*n*-butylaminobenzoic acid. It contains not less than 98·5 per cent., and not more than the equivalent of 101·0 per cent. of $C_{15}H_{24}O_2N_2{,}HCl$, calculated with reference to the substance dried over *sulphuric acid* in a vacuum desiccator for eighteen hours.

Characters. A white, crystalline powder; odourless; taste, slightly bitter, followed by a sensation of numbness.

Very soluble in *water*; soluble in *alcohol* (*95 per cent.*); insoluble in *ether*, and in *benzene*.

Tests for Identity. Dissolve 0·1 gramme in 10 millilitres of *water*, add 1 millilitre of a 25 per cent. w/v solution of *potassium thiocyanate* in *water*; collect the precipitate; recrystallise from *water*, and dry at 80°; *melting-point* of the crystals, 130° to 132°.

Dissolve about 0·1 gramme in 10 millilitres of *water*, add 0·2 millilitre of *dilute hydrochloric acid* and 0·2 millilitre of a 10 per cent. w/v solution of *sodium nitrite* in *water*; gradually add the mixture to 2 millilitres of *solution of β-naphthol*; a white precipitate is produced, and no colour develops (distinction from benzocaine, orthocaine and procaine hydrochloride).

An aqueous solution yields the *reactions* characteristic of chlorides.

Tests for Purity. *Melting-point*, 147° to 150°.

Loses, when dried over *sulphuric acid* in a vacuum desiccator for eighteen hours, not more than 1 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. Transfer about 0·3 gramme, accurately weighed, to a separator, add 25 millilitres of *water*, make alkaline with *test-solution of sodium hydroxide* and extract with successive quantities of 35, 30, 25, 20, 15, 10 and 10 millilitres of *ether*. Mix the ethereal solutions in a second separator, wash with 15 millilitres of *water*, filter through a plug of cotton wool, and wash the separator and filter with two successive quantities, each of 10 millilitres, of *ether*; remove the ether by evaporation in a current of warm air, and dry the residue to constant weight over *sulphuric acid* in a partially evacuated desiccator. Each gramme of the residue is equivalent to 1·1380 gramme of $C_{15}H_{24}O_2N_2,HCl$.

Storage. Amethocaine Hydrochloride should be kept in a well-closed container, protected from light.

Sterilisation of a Solution. A solution of Amethocaine Hydrochloride for parenteral injection is prepared by *heating with a bactericide* or by *filtration*. The containers comply with the *tests for limit of alkalinity of glass*.

AMPHETAMINA

[Amphetamin.]

Amphetamine

$C_6H_5{\cdot}CH_2{\cdot}CH(CH_3){\cdot}NH_2$ . . . . Mol. Wt. 135·1

Amphetamine is β-aminopropylbenzene and may be prepared by the reduction of the oxime of phenylacetone. It contains not less than 95·0 per cent. of $C_9H_{13}N$.

Characters. A colourless, mobile liquid; odour, slight and characteristic; taste, acrid; volatilises slowly at ordinary temperatures.

Slightly soluble in *water*, more soluble in *alcohol* (*95 per cent.*) and in *ether*; readily soluble in acids.

Tests for Identity. An aqueous solution is alkaline to *solution* of *litmus*.

Distils at about 200° with some decomposition.

Mix about 1 gramme with 50 millilitres of *water* and 10 millilitres of *test-solution of sodium hydroxide*; add 0·5 millilitre of *benzoyl chloride*, and

shake; repeat the addition of *benzoyl chloride*, in quantities of 0·5 millilitre, until no further precipitate is produced; *melting-point* of the precipitate, after crystallisation twice from *alcohol* (*50 per cent.*) and drying, 134° to 135°.

Tests for Purity. 0·5 gramme, heated on a water-bath for one hour, leaves not more than 0·0025 gramme of residue (limit of non-volatile compounds).

Dissolve 1 millilitre in 10 millilitres of anhydrous *liquid paraffin*; no turbidity is produced (limit of water).

Assay. Dissolve about 0·25 gramme, accurately weighed, in 25 millilitres of *N/10 sulphuric acid* and titrate the excess of acid with *N/10 sodium hydroxide*, using *solution of methyl red* as indicator. Each millilitre of *N/10 sulphuric acid* is equivalent to 0·01351 gramme of $C_9H_{13}N$.

AMPHETAMINÆ SULPHAS

[Amphetamin. Sulph.]

Amphetamine Sulphate

$[C_6H_5{\cdot}CH{\cdot}CH(CH_3){\cdot}NH_2]_2,\ H_2SO_4$ . . Mol. Wt. 368·3

Amphetamine Sulphate is β-aminopropylbenzene sulphate and may be prepared by neutralising β-aminopropylbenzene in alcoholic solution with sulphuric acid. It contains not less than 98·0 per cent. of $(C_9H_{13}N)_2,\ H_2SO_4$.

Characters. A white powder; odourless; taste, slightly bitter and followed by a sensation of numbness.

Soluble in 8·8 parts of *water* at 20° and in 515 parts of *alcohol* (*95 per cent.*), at 20°; insoluble in *ether*.

Tests for Identity. An aqueous solution is neutral to *solution of litmus*.

Dissolve about 1 gramme in 50 millilitres of *water*, and add 10 millilitres of *test-solution of sodium hydroxide*; add 0·5 millilitre of *benzoyl chloride*, and shake; repeat the addition of *benzoyl chloride*, in quantities of 0·5 millilitre, until no further precipitate is produced; *melting-point* of the precipitate, after crystallisation twice from *alcohol* (*50 per cent.*) and drying, 134° to 135°.

Yields the *reactions* characteristic of sulphates.

Test for Purity. 0·5 gramme loses, when dried at 100°, not more than 0·005 gramme; and leaves, on incineration, not more than 0·0005 gramme of residue.

Assay. Dissolve about 0·25 gramme, accurately weighed, in 10 millilitres of *water* in a separator; add 1·5 millilitres of *test-solution of sodium hydroxide* and extract with six successive quantities, each of 15 millilitres, of *ether*; wash the mixed ethereal liquids with 2 millilitres of *water*, add 20 millilitres of *N/10 hydrochloric acid*, shake, and evaporate the ether on a water-bath. Titrate the excess of acid with *N/10 sodium hydroxide*, using *solution of methyl red* as indicator. Each millilitre of *N/10 hydrochloric acid* is equivalent to 0·018415 gramme of $(C_9H_{13}N)_2,\ H_2SO_4$.

DOSES

Metric.	Imperial.
0·005 to 0·01 gramme	1/12 to 1/6 grain

ANEURINÆ HYDROCHLORIDUM

[Aneurin. Hydrochlor.]

Aneurine Hydrochloride

Synonyms. Aneurine Chloride Hydrochloride: Vitamin B_1: Thiamine Hydrochloride.

$C(NH_2):N\cdot C(CH_3):N\cdot CH:C\cdot CH_2\cdot NCl:CH\cdot S\cdot C(CH_3)\cdot CH_2OH):C(CH_3),HCl,H_2O$
Mol. Wt. 355·2

Aneurine Hydrochloride is 3-(4′-amino-2′-methylpyrimidyl-5′-methyl)-4-methyl-5-β-hydroxyethylthiazolium chloride hydrochloride. It may be obtained from rice polishings, yeast and other natural sources, or by synthesis. It contains not less than 20·4 per cent. and not more than 21·2 per cent. of total Cl, not less than 10·3 per cent. and not more than 10·8 per cent. of Cl present as hydrochloride, and not less than 95 per cent. and not more than the equivalent of 103 per cent. of anhydrous aneurine hydrochloride, all calculated with reference to the substance dried at 105°.

Characters. Colourless, monoclinic plates, usually in rosette-like clusters; odour, characteristic; taste, bitter.

Readily soluble in *water*; less soluble in *methyl alcohol*; almost insoluble in *dehydrated alcohol*, in *ether* and in *acetone*.

Tests for Identity. To a solution of 0·02 milligram in 0·3 millilitre of a mixture of 7 volumes of *N/1000 hydrochloric acid* and 3 volumes of *alcohol* (*90 per cent.*), add 1 drop of *solution of formaldehyde*, followed immediately by a solution prepared by adding 1·25 millilitres of a mixture of equal volumes of *N/1 sodium hydroxide* and a 5·75 per cent. w/v solution of *sodium bicarbonate* in *water* to 0·5 millilitre of *solution of diazobenzenesulphonic acid*; set aside; a pink colour is slowly developed; add 2 millilitres of *butyl alcohol* and shake; the alcoholic layer is pink.

Dissolve about 0·01 gramme in 10 millilitres of *2N sodium hydroxide*, add 10 millilitres of *solution of potassium ferricyanide* and 5 millilitres of *butyl alcohol*, shake for two minutes and allow to separate; the alcoholic layer shows an intense blue fluorescence which disappears on acidification and reappears on making alkaline.

Dissolve 0·05 gramme in 5 millilitres of *water*, add 10 millilitres of a saturated solution of *trinitrophenol* in *water*, manipulate the precipitate gently with a glass rod and set aside for twenty minutes, collect the precipitate, dry on porous earthenware and then at 105° for thirty minutes; *melting-point* of the dried material, 206° to 208°, with darkening and decomposition, after sintering at 200°.

Tests for Purity. *Reaction* of a 5 per cent. w/v solution in *water*, *p*H 3·4 to 3·6.

Loses, when dried at 105°, not more than 5·1 per cent. of its weight, the drying being continued until two consecutive weighings of the residue do not differ by more than 0·1 per cent. of the weight, the second weighing following an additional hour of drying.

Leaves, on incineration, not more than 0·2 per cent. of residue.

Assay. *For total chlorine.* Dissolve about 0·1 gramme, accurately weighed in 20 millilitres of *water*, acidify with *dilute nitric acid* and add 10 millilitres of *N/10 silver nitrate*. Filter, wash the precipitate with *water*, and titrate

the filtrate and washings with *N/10 ammonium thiocyanate*, using *solution of ferric ammonium sulphate* as indicator. Each millilitre of *N/10 silver nitrate* is equivalent to 0·003546 gramme of Cl.

For chlorine present as hydrochloride. Dissolve about 0·1 gramme, accurately weighed, in 20 millilitres of *water*, and titrate with *N/10 sodium hydroxide*, using *solution of bromothymol blue* as indicator and titrating to the bluish green colour indicative of *p*H 7. Each millilitre of *N/10 sodium hydroxide* is equivalent to 0·003546 gramme of Cl.

For aneurine hydrochloride. Carry out the *fluorimetric assay of aneurine hydrochloride*.

Storage. Crystalline Aneurine Hydrochloride is stable, when kept in a glass bottle, protected from light. Solutions of Aneurine Hydrochloride are stable if acid (*p*H not higher than 5·0). Neutral and alkaline solutions deteriorate rapidly, especially in contact with air.

DOSES

Metric.	Imperial.
Prophylactic (daily).	
0·0003 to 0·0006 gramme. (100 to 200 Units.)	$^1/_{200}$ to $^1/_{100}$ grain.
Therapeutic (daily).	
0·0006 to 0·0018 gramme. (200 to 600 Units.)	$^1/_{100}$ to $^1/_{30}$ grain.

The antineuritic activity of a preparation containing vitamin B_1, for which the chemical assay is not applicable, is determined in relation to the Standard Preparation of antineuritic vitamin (vitamin B_1) by the *biological assay of antineuritic vitamin (vitamin B_1)*, and is expressed in Units per gramme.

BELLADONNA PULVERATA

[Bellad. Pulverat.]

Powdered Belladonna Herb

Synonyms. Pulvis Belladonnæ: Powdered Belladonna Leaf.

Powdered Belladonna Herb is Belladonna Herb, reduced to a *fine powder* and adjusted, if necessary, either by the admixture in suitable proportions of powdered belladonna herb, having lower or higher alkaloidal content, or by the addition of powdered exhausted Belladonna Herb, to contain 0·3 per cent. of alkaloids, calculated as hyoscyamine (limits 0·28 to 0·32).

Test for Purity. *Acid-insoluble ash*, not more than 3 per cent.

Assay. Carry out the Assay as directed under 'Belladonnæ Herba', using 10 grammes.

Storage. Powdered Belladonna Herb must be kept in an air-tight container.

DOSES

Metric.	Imperial.
0·03 to 0·2 gramme	$^1/_2$ to 3 grains.

Powdered Belladonna Herb contains in 0·2 gramme 0·0006 gramme, and in 3 grains about 1/100 grain, of the alkaloids of Belladonna Herb, calculated as hyoscyamine.

BELLADONNÆ HERBA

[Bellad. Herb.]

Belladonna Herb

Synonyms. Belladonnæ Folium: Belladonna Leaf.

Belladonna Herb consists of the leaves, or leaves and other aerial parts, of *Atropa Belladonna* Linn., or of *Atropa acuminata* Royle ex Lindley, or a mixture of both species, collected when the plants are in flower, and dried. It contains not less than 0·30 per cent. of the alkaloids of Belladonna Herb, calculated as hyoscyamine.

Characters. Sometimes crumpled and twisted and partly matted together, or in fragments. Leaves, alternate, often in pairs, each consisting of a larger and a smaller leaf; green or brownish-green, thin and brittle; lamina, mostly 5 to 25 centimetres long and 2·5 to 12 centimetres wide; entire, ovate-lanceolate to broadly ovate, with an acuminate apex; lamina somewhat decurrent and only slightly hairy; when broken transversely, showing white points on the broken surface; petiole mostly from 0·5 to 4 centimetres long. Associated with many of the pairs of leaves, a drooping flower borne upon a short pedicel and sometimes also an axillary shoot bearing one or more flowers; corolla about 2·5 centimetres long and 1·2 centimetres wide, campanulate, purplish or yellowish-brown, with 5 small, reflexed lobes. Stamens, five, epipetalous; ovary, superior, bilocular with numerous ovules. Stems, more or less hollow and flattened, finely hairy when young. Fruit, immature, subglobular, green to brown up to about 12 millimetres in width, with numerous flattened subreniform seeds.

Leaf, epidermal cells with more or less sinuous anticlinal walls and striated cuticle. Trichomes, more numerous on young leaves, simple uniseriate conical trichomes with smooth outer walls, short clavate glandular trichomes with multicellular heads, and long glandular trichomes with uniseriate stalks and unicellular heads. Stomata, more numerous in the lower epidermis, of the *cruciferous type*. Lamina, palisade in a single layer; occasional cells of the spongy parenchyma containing microsphenoidal crystals. Midrib, containing an arc of several collateral vascular bundles with upper supernumerary strands of phloem, also with upper collenchyma. Stem, with few trichomes, longitudinally striated cuticle, endodermal starch sheath, some small strands of pericyclic fibres, xylem fibres, large reticulate vessels with bordered pits, perimedullary phloem as supernumerary strands and pith with occasional idioblasts containing microsphenoidal crystals. Calyx, with numerous uniseriate trichomes terminated by 1 to 3 glandular cells, sepals of some flowers turning red along margins and base in *solution of chloral hydrate*. Corolla, with papillose inner epidermis and trichomes on the outer epidermis similar to those on the calyx, petals of some flowers also turning red in *solution of chloral hydrate*. Pollen grains, in *solution of chloral hydrate*, subspherical, about 40 microns in diameter, tricolpate, having three broad germinal furrows and rows of pits alternating with ridges on the exine. Epicarp of fruit, with polygonal epidermal cells having straight walls and cuticular striæ. Testa of seed, white to brown with undulated ridges over anticlinal walls.

Odour, slight; taste, somewhat bitter and acrid.

Test for Purity. *Acid-insoluble ash*, not more than 3 per cent.

Assay. Introduce 10 grammes in *No. 60 powder* into a flask, and add 50 millilitres of a mixture of 4 volumes of *ether*, and 1 volume of *alcohol (95 per cent.)*

Shake well, set aside for ten minutes, add 1·5 millilitres of *dilute solution of ammonia* mixed with 2 millilitres of *water*, and shake frequently during one hour. Transfer the mixture to a small percolator plugged with cotton wool, and, when the liquid ceases to flow, pack firmly, and continue the percolation first with a further 25 millilitres of the ether-alcohol mixture, and then with *ether*, until *complete extraction* of the alkaloids is effected. The total time of percolation should not exceed three hours. To the percolate add 20 millilitres of *N/2 hydrochloric acid*, shake, allow to separate, and run off the lower layer. Continue the extraction with successive quantities, each of 10 millilitres, of a mixture of 3 volumes of *N/10 hydrochloric acid* and 1 volume of *alcohol* (*95 per cent.*), until *complete extraction* of the alkaloids is effected. Wash the mixed acid solutions with about 10 millilitres of *chloroform*, run off the latter into a second separator containing 20 millilitres of *N/10 hydrochloric acid*, shake, allow to separate, and reject the chloroform. Repeat the extraction of the liquid in the first separator with two further quantities, each of 5 millilitres, of *chloroform*, transferring each to the second separator and washing with the same aqueous acid liquid as before. Transfer the acid liquid from the second separator to the first separator, make distinctly alkaline with *dilute solution of ammonia*, and shake with successive quantities of *chloroform*, until *complete extraction* of the alkaloids is effected. Wash the combined chloroform solutions with about 3 millilitres of *water*. Remove most of the chloroform and transfer the remainder of the chloroform solution to a shallow open dish. Complete the removal of the chloroform, add to the residue 2 millilitres of *dehydrated alcohol*, evaporate to dryness, dry at 100° and weigh at intervals of one hour, until two successive weighings do not differ by more than 0·001 gramme. Dissolve the residue in 20 millilitres of *N/50 sulphuric acid*, and titrate with *N/50 sodium hydroxide*, using *solution of methyl red*, or *tincture of cochineal*, as indicator. Each millilitre of *N/50 sulphuric acid* is equivalent to 0·005784 gramme of hyoscyamine.

Storage. Belladonna Herb should be stored in a dry place.

Preparations. Belladonna Pulverata.
Extractum Belladonnæ Herbæ Liquidum.
Extractum Belladonnæ Siccum.
Tinctura Belladonnæ.

When Belladonnæ Herba, Belladonnæ Folium, Pulvis Belladonnæ Herbæ or Pulvis Belladonnæ Folii is prescribed, Belladonna Pulverata shall be dispensed.

BELLADONNÆ RADIX

[Bellad. Rad.]

Belladonna Root

Belladonna Root is the dried root, or root and rootstock, of *Atropa Belladonna* Linn., or of *Atropa acuminata* Royle ex Lindley, or a mixture of both species. It contains not less than 0·40 per cent. of the alkaloids of Belladonna Root, calculated as hyoscyamine.

Characters. *Atropa Belladonna.* Nearly cylindrical, entire or longitudinally split, sparingly branched, up to about 4 centimetres in diameter at the crown; fracture, short; externally, pale greyish-brown, finely wrinkled longitudinally; internally, whitish to brownish; sometimes crowned by the rootstock, bearing the bases of the hollow aerial stems.

Root, epidermis and cortex, usually lost; cork, of 6 to 8 layers of

brownish quadrangular cells; phelloderm, of up to 5 layers of radially arranged parenchymatous cells; secondary phloem, containing simple rounded or angular starch grains about 3 to 8 to 16 to 30 microns in diameter or compound of 2 or 3 components, and forming a broad band consisting of small bundles of sieve tissue embedded in abundant phloem parenchyma, the inner part radially arranged, with numerous idioblasts containing microsphenoidal crystals of calcium oxalate; cambiform tissue of about 5 to 8 layers of rectangular prismatic cells; secondary xylem, forming the greater part of the root and consisting mainly of cellulosic xylem parenchyma radially arranged with numerous scattered groups of about 3 to 10 vessels with associated pitted tracheids and fibres; vessels, about 40 to 180 microns in diameter, with bordered pits, occasionally reticulate, sometimes sinuous, distinctly articulated, the segments about 120 to 200 microns long; interxylary phloem, occasional, small scattered groups of sieve tubes; medullary rays, 1 to 5 cells wide, cells near the vessels sometimes thick-walled and pitted; a central solid diarch strand of primary xylem. Rootstock, periderm and phloem, similar to those of the root, sometimes with portions of the parenchymatous cortex remaining externally and occasional pericyclic fibres; a broad cream-coloured or yellowish xylem showing secondary growth as alternating rings of parenchyma and lignified tissue containing scattered groups of vessels similar to those of the root and much lignified xylem parenchyma with bordered pits; perimedullary phloem, with occasional slender fibres singly or in groups of up to about 5; outer part of pith, parenchymatous, with idioblasts containing microsphenoidal crystals of calcium oxalate, sometimes enclosing an internal periderm; inner part of pith, lacunar.

Atropa acuminata. Nearly cylindrical pieces about 0·5 to 3 centimetres in diameter, occasionally branched; pieces including the crown, about 3 to 9 centimetres in diameter at the summit, bearing the bases of about 4 to 12 aerial stems. Root, slightly contorted; fracture short; externally pale brownish-grey and wrinkled longitudinally; internally, a rather dark bark about 1 millimetre thick surrounding a yellowish-grey woody core, consisting of a central, solid cylinder of porous xylem, or cellulosic tissue containing scattered groups of large vessels, externally to which are from 1 to 4 concentric cylinders of yellowish xylem strands separated by narrow cylinders of parenchyma and sieve tissue, and traversed radially by numerous narrow medullary rays; cork, consisting of several layers of brownish cells; secondary phloem with scattered slightly lignified fibres and fibrous cells, collapsed sieve tubes and cells with brown colouring matter; primary xylem diarch; several, usually up to 4, concentric cylindrical tubes of secondary xylem composed of large vessels, about 100 to 250 microns in diameter, with small tracheids and xylem parenchyma; very narrow cylindrical tubes alternating with those of xylem composed of thin-walled, cellulosic parenchyma and soft sieve tissue; medullary rays, composed of starch-bearing, thin-walled parenchyma with occasional idioblasts containing sandy, microsphenoidal crystals of calcium oxalate; in the central mass, two medullary rays only; in the surrounding xylem cylinders numerous medullary rays. Rootstock, a central pith about 5 millimetres in diameter, surrounded by concentric cylinders of xylem strands with medullary rays as in the root; externally, a narrow bark about 1 to 2 millimetres wide; pith, often dark in colour, sometimes fistular. Bases of the aerial stems, about 1 to 2 centimetres in diameter, hollow, with a xylem cylinder about 2 to 3 millimetres thick; cork, phloem and secondary xylem, similar to those of the root; at the centre, a pith composed of thin-walled, rounded cellulosic parenchyma, with some idioblasts with sandy, microsphenoidal crystals of calcium oxalate; just within the xylem, perimedullary sieve tissue with scattered fibres on the inner side; in the cells

of the medullary rays, phloem and xylem parenchyma, small rounded starch grains from 3 to 5 to 15 to 21 microns in diameter, with occasional compound grains of 2 components.

Test for Purity. *Acid-insoluble ash*, not more than 2 per cent.

Assay. Carry out the Assay as directed under ' Belladonnæ Herba '.

Preparations. Emplastrum Belladonnæ.
Extractum Belladonnæ Liquidum.
Suppositorium Belladonnæ.
Linimentum Belladonnæ.

CONFECTIO SULPHURIS

[Conf. Sulphur.]

Confection of Sulphur

The Tincture of Orange may be omitted in making this Confection.

CYCLOPROPANUM

[Cycloprop.]

Cyclopropane

$CH_2 \cdot CH_2 \cdot CH_2$ . . . . . Mol. Wt. 42·05

Cyclopropane may be prepared by the action of zinc on 1 : 3-dibromopropane. It contains not less than 99 per cent. v/v of C_3H_6. For convenience in use it is compressed in metal cylinders.

Characters. A colourless gas at atmospheric temperature and pressure; inflammable; mixtures with oxygen or air at certain concentrations are explosive; odour, characteristic. It boils at — 34·5° at 760 millimetres pressure. The material liquefied under pressure has a density of 0·61 gramme per millilitre at 20°.

One volume dissolves in about 2·7 volumes of *water* at 15°. Very soluble in *alcohol (90 per cent.)*, in *ether*, and in *chloroform*.

Tests for Identity and Purity. Transfer to a cylinder, cooled in a bath at a temperature not higher than — 40°, 10 millilitres of the liquid, pour this in successive small quantities on a clean filter-paper and allow it to evaporate spontaneously; no foreign odour is detectable at any stage of the evaporation.

Pass a volume of the gas equivalent to 1000 millilitres, measured at normal temperature and pressure, through a weighed tube containing *potassium hydroxide* in small pieces, the time occupied being forty to sixty minutes; the increase in weight of the tube does not exceed 0·0056 gramme, equivalent to 0·3 per cent. w/w of the cyclopropane used (limit of alcohol, water and acidity). Pass the gas issuing from the tube containing *potassium hydroxide* through a gas washing trap, provided with a sintered-glass bubbler containing 20 millilitres of *solution of iodine monochloride*, and connected with a guard tube containing *solution of potassium iodide*; determine the amount of halogen absorbed, by titrating the contents of the trap and guard tube with *N/10 sodium thiosulphate*; not more than 1·8 millilitres is required, equivalent to 0·2 per cent. w/w of unsaturated substances calculated as propylene (limit of unsaturated substances).

Dilute 0·3 millilitre of *solution of methyl red* with 400 millilitres of boiling *water* and boil the solution for five minutes. Cool to about 80° and pour 100 millilitres of the solution into each of three matched Nessler tubes marked 'A', 'B' and 'C' respectively. To tube 'B' add 0·2 millilitre of *N/100 hydrochloric acid* and to tube 'C' add 0·4 millilitre of *N/100 hydrochloric acid*. Stopper each of the tubes and cool to room temperature. Pass a volume of the gas equivalent to 2000 millilitres, measured at normal temperature and pressure, through the solution in tube 'B', the time occupied being about thirty minutes. Compare tube 'B' with tubes 'A' and 'C'; the colour of the solution in tube 'B' is not deeper red than that of the solution in tube 'C' and not deeper yellow than that of the solution in tube 'A' (limit of acidity and of alkalinity).

Pass a volume of gas equivalent to 1000 millilitres, measured at normal temperature and pressure, and the necessary amount of air, into a small mixing chamber and pass the resulting mixture through a heated quartz tube containing pieces of platinised quartz, or through a heated silica tube containing sintered silica plates, or pieces of platinised quartz, the time occupied being not less than forty minutes. Absorb the products of combustion in 50 millilitres of a 3 per cent. w/v solution of *sodium peroxide* in *water*. Boil the solution for about ten minutes, cool, neutralise with a solution of *nitric acid* (containing approximately 30 per cent. w/w of HNO_3) and add 5 millilitres of *dilute nitric acid* (test solution). To 50 millilitres of the same solution of *sodium peroxide* which has been boiled, cooled, neutralised and acidified in the same manner, add 7·5 millilitres of *N/1000 potassium bromide* (control solution). Transfer the solutions to 100-millilitre matched Nessler tubes, add 0·1 millilitre of *N/10 silver nitrate* to each, dilute to 100 millilitres with *water*, mix well and allow to stand in the dark for fifteen minutes. Compare the turbidities of the two solutions by viewing them transversely and through the whole depth of the liquid against a black background; the turbidity of the test solution does not exceed that of the control solution (limit of bromine-containing substances, corresponding to 0·05 per cent. calculated as propyl bromide).

Assay. Place in a suitable nitrometer, containing *mercury*, a volume of the material, drawn from the liquid phase, equivalent to 80 to 100 millilitres of the gas measured at normal temperature and pressure, add 25 millilitres of *sulphuric acid* and allow to stand for fifteen minutes; not less than 99 per cent. v/v is absorbed.

DEXTROSUM HYDRATUM

[Dextros. Hyd.]

Dextrose Monohydrate

Synonyms. Medicinal Glucose : Purified Glucose.

$C_6H_{12}O_6,H_2O$ . . . . . Mol. Wt. 198·1

Dextrose Monohydrate may be prepared from starch by hydrolysis.

Characters. Colourless crystals, or a white or cream-coloured, crystalline or granular powder; odourless; taste, sweet.

Soluble in less than 1 part of *water*; soluble in about 50 parts of *alcohol* (*90 per cent.*); more soluble in boiling *alcohol*.

Tests for Identity and Purity. Loses, when dried at 105°, not less than 6 per cent., and not more than 10 per cent., of its weight.

Complies with the other Tests for Identity and Purity described under 'Dextrosum'.

EXTRACTUM BELLADONNÆ HERBÆ LIQUIDUM

[Ext. Bellad. Herb. Liq.]

Liquid Extract of Belladonna Herb

Synonyms. Extractum Belladonnæ Folii Liquidum: Liquid Extract of Belladonna Leaf.

Liquid Extract of Belladonna Herb contains 0·75 per cent. w/v of the alkaloids of Belladonna Herb, calculated as hyoscyamine (limits, 0·70 to 0·80).

Belladonna Herb, in *moderately coarse powder*	1000 grammes
Alcohol (95 per cent.), Distilled Water	of each a sufficient quantity

Exhaust the Belladonna Herb by percolation with a mixture of 5 volumes of Alcohol (95 per cent.) and 1 volume of Distilled Water, reserving the first 200 millilitres. Remove the alcohol from the remainder of the percolate at a temperature not exceeding 60°, add the reserved liquid, remove the alcohol from the mixture at a temperature not exceeding 60°, and adjust the volume of the residual liquid to 1250 millilitres either by concentration at a temperature not exceeding 60° or by the addition of Distilled Water. Set aside at a temperature of about 2° for two days; filter through a small filter and thoroughly wash the residue and filter with Distilled Water. Evaporate the filtrate and washings to 300 millilitres at a temperature not exceeding 60°, and add 100 millilitres of Alcohol (95 per cent.). Determine the proportion of alkaloids in the liquid, thus obtained, by the Assay described below. To the remainder of the liquid add sufficient of a mixture of 14 volumes of Distilled Water and 5 volumes of Alcohol (95 per cent.) to produce a Liquid Extract of Belladonna Herb of the required strength. Set aside for not less than twelve hours; filter, if necessary.

Assay. Carry out the Assay as directed under 'Extractum Belladonnæ Liquidum'.

DOSES

Metric.	Imperial.
0·015 to 0·06 mil.	¼ to 1 minim.

EXTRACTUM BELLADONNÆ LIQUIDUM

[Ext. Bellad. Liq.]

Liquid Extract of Belladonna

When Liquid Extract of Belladonna is prescribed, or demanded, Liquid Extract of Belladonna Herb may be dispensed, or supplied.

EXTRACTUM BELLADONNÆ SICCUM

[Ext. Bellad. Sicc.]

Dry Extract of Belladonna

Belladonna Herb is used in making this preparation.

EXTRACTUM COLCHICI CORMI LIQUIDUM

[Ext. Colch. Corm. Liq.]

Liquid Extract of Colchicum Corm

Liquid Extract of Colchicum Corm contains 0·3 per cent. w/v of colchicine (limits, 0·27 to 0·33).

Colchicum Corm, dried, in *moderately fine powder*	1000 grammes
Alcohol (60 per cent.) . . .	a sufficient quantity

Exhaust the Colchicum Corm, by percolation with Alcohol (60 per cent.), reserving the first 600 millilitres of the percolate. Remove the alcohol from the remainder of the percolate, and evaporate the residue to a soft extract under reduced pressure at a temperature not exceeding 60°. Dissolve the extract in the reserved liquid. Determine the proportion of colchicine in the liquid, thus obtained, by the Assay described below. To the remainder of the liquid add sufficient Alcohol (60 per cent.) to produce a Liquid Extract of Colchicum Corm of the required strength. Set aside for not less than twenty-four hours; filter, if necessary.

Assay. Evaporate 20 millilitres to dryness on a water-bath, and complete the Assay as directed under 'Colchici Semen', commencing with the words 'wash the residue into a separator with 20 millilitres of a 20 per cent. w/v aqueous solution of *sodium sulphate* . . .' and including the modification described under 'Colchici Cormus'.

Preparation. Tinctura Colchici.

DOSES

Metric.	Imperial.
0·12 to 0·3 mil.	2 to 5 minims.

Liquid Extract of Colchicum Corm contains in 0·3 mil 0·0009 gramme, and in 5 minims about $^1/_{70}$ grain, of colchicine.

EXTRACTUM COLCHICI LIQUIDUM

[Ext. Colch. Liq.]

Liquid Extract of Colchicum

When Liquid Extract of Colchicum is prescribed, or demanded, Liquid Extract of Colchicum Corm may be dispensed, or supplied.

GENERAL MEDICAL COUNCIL

BRITISH PHARMACOPŒIA

PHARMACOPŒIAL NAMES—APPROVED NAMES

New names of drugs have been made official by their use as the titles of monographs in Addenda to the British Pharmacopœia, 1932. Names for certain other drugs, for which no official monographs are provided, have been published as Approved Names, the intention being that if any of the drugs is eventually described in the British Pharmacopœia, the Approved Name shall become its official title. The recognition of an Approved Name does not imply that the substance will be included in the Pharmacopœia. These names are now brought together for reference, together with other names under which the drugs have been known. For some drugs numerous other names have been introduced; the lists that follow include, in most instances, under Other Names, only the names under which the substances were originally introduced; some of these names are registered trade marks.

Since the intention is to give recognition to non-proprietary names which may be used freely by manufacturers, and thus to avoid the difficulties which arise from the multiplication of names for the same substance, it is hoped that the Approved Names will be generally adopted and used in prescribing. The introduction of new names for substances for which Pharmacopœial names or Approved Names are available is especially deprecated, and if a manufacturer desires to issue under a proprietary name a drug for which an Approved Name has been provided, it is strongly recommended that the label shall bear the Approved Name of the substance in letters no less conspicuous than those in which the proprietary name is printed or written.

NAMES MADE OFFICIAL BY MEANS OF ADDENDA TO THE BRITISH PHARMACOPŒIA, 1932

The Addenda in which the names are made official are indicated in brackets

PHARMACOPŒIAL NAMES	OTHER NAMES
Acetarsol (First)	Stovarsol
Amethocaine Hydrochloride (Seventh)	Decicaine; Tetracaine Hydrochloride, U.S.P. XII
Amphetamine (Seventh)	Benzedrine
Amphetamine Sulphate (Seventh)	Benzedrine sulphate
Bromethol (Third)	Avertin
Carbachol (Third)	Doryl
Chiniofon (First)	Yatren
Chlorocresol (Third)	*Para*chloro*meta*cresol
Chloroxylenol (Sixth)	*Para*chloro*meta*xylenol
Dithranol (Sixth)	Cignolin
Hexobarbitone (Third)	Evipan
Iodoxyl (Third)	Uroselectan-B
Leptazol (Third)	Cardiazol
Menaphthone (Sixth)	Menadione, U.S.P. XII
Mepacrine Hydrochloride (Third)	Atebrin; Quinacrine Hydrochloride, U.S.P. XII
Mepacrine Methanesulphonate (Third)	Atebrin musonate
Mersalyl (First)	Salyrgan is Injection of Mersalyl
Nicotinamide (Sixth)	Niacinamide
Nikethamide (Third)	Coramine
Pamaquin (Fourth)	Plasmoquin
Phemitone (Third)	Prominal
Silver Protein (Argentoproteinum) (First)	Protargol
Sodium Bismuthyltartrate (First)	Sobita
Soluble Hexobarbitone (Third)	Evipan Sodium
Soluble Pentobarbitone (Seventh)	Nembutal
Soluble Thiopentone (Seventh)	Pentothal Sodium
Stibophen (Third)	Fouadin
Stilbœstrol (Sixth)	Diethylstilbestrol, U.S.P. XII (First Supplement)
Sulphacetamide (Seventh)	Albucid
Sulphanilamide (Fourth)	Prontosil Album
Sulphapyridine (Seventh)	Dagenan; M. & B. 693
Sulphathiazole (Seventh)	Thiazamide; Cibazol
Suramin (Fourth)	Germanin; Bayer 205; Antrypol
Theophylline with Ethylenediamine (Seventh)	Euphyllin; Aminophylline

APPROVED NAMES

APPROVED NAMES	OTHER NAMES
Cyclobarbitone	5-Δ^1-Cyclohexenyl-5-ethylbarbituric acid; Phanodorm
Desoxycortone Acetate	Δ^4-Pregnen-21-ol-3 : 20-dione acetate; Desoxycorticosterone acetate; Deoxycorticosterone acetate
Dicoumarol	3 : 3′-methylene-bis(4-hydroxycoumarin); Temparin
Dienoestrol	Di-*p*-hydroxyphenylhexadiene; $\gamma\delta$-bis-(4-hydroxyphenyl)-$\Delta^{\beta\delta}$-hexadiene
Dimethylstilbamidine	4 : 4′-Diamidino-α : β-dimethylstilbene
Diodone	3 : 5-Diiodo-4-pyridone-N-acetic acid with diethanolamine; Perabrodil
Diphenan	*para*Benzylphenyl carbamate; Butolan
Ethisterone	Ethinyltestosterone; Pregneninolone
Hexazole	4-Cyclohexyl-3-ethyl-1 : 2 : 4-triazole; Azoman; Triazole
Meprechol	Trimethylmethoxypropenylammonium bromide; Esmodil is a 0·3 per cent. isotonic solution
Mesulphen	2 : 6-Dimethylthianthrene; Dimethyldiphenylene disulphide; Mitigal
Pentamidine	α : ω-(4 : 4′-Diamidinodiphenoxy)pentane
Pethidine Hydrochloride	Ethyl 1-methyl-4-phenylpiperidine-4-carboxylate; Dolantin; Demerol
Pheniodol	α-Phenyl-β-(4-hydroxy-3 : 5-diiodophenyl)-propionic acid; Biliselectan
Pholedrine	β-Methylamino-4-hydroxypropylbenzene; Veritol
Propamidine	α : ω-(4 : 4′-Diamidinodiphenoxy)propane
Soluble Phenytoin	Sodium 5 : 5-diphenylhydantoinate; Phenytoin Sodium; Soluble Dilantin; Epanutin
Stilbamidine	4 : 4′-Diamidinostilbene
Sulphadimethylpyrimidine	2-(*p*-Aminobenzenesulphonamido)4 : 6-dimethylpyrimidine; Sulphamezathine
Thiomersalate	Sodium ethylmercurithiosalicylate; Merthiolate

EXTRACTUM PITUITARII LIQUIDUM

[Ext. Pituit. Liq.]

Pituitary (Posterior Lobe) Extract

CAUTION.—In any part of the British Empire in which Pituitary (Posterior Lobe) Extract is controlled by law, care must be taken that the provisions of such law are duly complied with. (*See British Pharmacopœia, 1932, page 12.*)

Synonyms. Injectio Pituitarii Posterioris: Pituitary Extract.

Pituitary (Posterior Lobe) Extract is an aqueous extract of the posterior lobe of pituitary bodies of oxen or other mammals. It contains 10 Units (oxytocic) per millilitre.

The pituitary bodies, removed from the animal as soon as possible after death, are immediately frozen. The posterior lobes, dissected from the frozen material, are subdivided, and are either used immediately for preparation of the extract, or dried and powdered, after removal of water by immersion in several successive changes of a large volume of Acetone. The fresh subdivided posterior lobes are extracted with Distilled Water, acidified with Acetic Acid, sufficiently hot to coagulate the proteins and to destroy the autolytic enzymes present, and having a *reaction* between the limits corresponding to *p*H 3 and *p*H 4, or the dry powder is similarly treated. The solution is filtered, the filtrate is assayed and, if necessary, diluted to the required strength, and again adjusted to the required degree of acidity; it is then distributed into *sterilised* glass containers which are sealed so as to exclude bacteria. The extract is sterilised either by *filtration* before being distributed into the glass containers, or by *heating in an autoclave* after being sealed in the containers. If the extract is sterilised by *filtration* a suitable antiseptic is added in sufficient proportion to prevent the growth of bacteria.

Characters. A clear, colourless liquid with a faint odour, and having a *reaction* between the limits corresponding to the values *p*H 3 and *p*H 4.

Tests for Identity. It complies with each of the three following tests:—(1) It causes contraction of the muscle of the mammalian uterus, suspended in a bath as directed under the *biological assay of pituitary (posterior lobe) extract*. (2) It causes a rise of the blood pressure when injected into the vein of a mammal, anæsthetised by a general anæsthetic or by destruction of the brain. (3) When injected under the skin of a mammal, at the same time as a volume of water is administered by mouth, it causes a delay in the excretion of the water.

Tests for Purity. When mixed with an equal volume of *2N sodium hydroxide* and allowed to stand for one hour at room temperature, and then neutralised, the actions on the blood pressure and on the excretion of water disappear, and the activity on the muscle of the guinea-pig's uterus is reduced to not more than 5 per cent. of that originally present.

It complies with the *tests for sterility*.

Assay. Determine the oxytocic activity by the *biological assay of pituitary (posterior lobe) extract*, and express it as the number of Units (oxytocic) per millilitre.

Containers. The containers of Pituitary (Posterior Lobe) Extract are either sealed glass ampoules, or glass phials sealed so as to allow the withdrawal of successive doses on different occasions. If containers of the latter form are used, Pituitary (Posterior Lobe) Extract contains a sufficient proportion of some antiseptic to prevent the growth of any organism which may be accidentally introduced in the process of removing a portion of the contents of the container. The glass ampoules, or glass phials, comply with the *tests for limit of alkalinity of glass*.

Storage. Pituitary (Posterior Lobe) Extract should be kept at as low a temperature as possible above its freezing-point. Under these conditions it may be expected to retain its potency for at least eighteen months after the date of manufacture, provided that the reaction lies between the limits of *p*H 3 and *p*H 4.

Labelling. The label on each container states the number of Units (oxytocic) per millilitre. If the number of Units (antidiuretic) or of Units (pressor) is also stated, the activity to which the Units refer must be determined by *the biological assay of pituitary (posterior lobe) extract* and expressed as the number of Units per millilitre.

The label on the container, or the label or wrapper on the package, states :—(1) the date of manufacture ; (2) the date after which the preparation is not intended to be used.

DOSES

By subcutaneous or intramuscular injection.

2 to 5 Units (0·2 to 0·5 ml).

INJECTIO INSULINI

[Inj. Insulin.]

Injection of Insulin

CAUTION.—In any part of the British Empire in which Insulin is controlled by law, care must be taken that the provisions of such law are duly complied with. (*See British Pharmacopœia, 1932, page 12.*)

Synonym. Insulin.

Injection of Insulin is a sterile solution of the specific antidiabetic principle of the mammalian pancreas, containing 20, 40 or 80 Units per millilitre.

It may be prepared by the following method. The pancreas, which must be either fresh or kept frozen from the time of removal from the body, is finely divided. Alcohol (95 per cent.) is then added, until the concentration of ethyl alcohol is about 60 per cent. v/v, together with a sufficient quantity of Hydrochloric Acid to make the *reaction* of the mixture not less than *p*H 3·0 and not more than *p*H 3·5. The mixture is then filtered, and the filtrate evaporated to small bulk, to which Alcohol (95 per cent.) is added until the concentration of

ethyl alcohol is between 60 and 70 per cent. v/v. A precipitate of inert matter is removed by filtration. To the filtrate, Dehydrated Alcohol is added, until the concentration of ethyl alcohol is 95 per cent. v/v. The precipitate so obtained is collected and dissolved in water. The active material is separated from this solution either by adjusting the *reaction* of the solution to the iso-electric point (which lies between the limits corresponding to the values *p*H 5 and *p*H 6), or by adding Trinitrophenol. The precipitate, obtained in the former way, is dried and powdered. The precipitate, obtained in the latter way, is dissolved in a solvent, containing 6 volumes of Alcohol (80 per cent.) to 1 volume of Dilute Hydrochloric Acid and 1 volume of Distilled Water. This solution is poured into excess of Acetone, and the resulting precipitate is dried and powdered. The necessary quantity of the dry powder is dissolved in Distilled Water acidified to a *reaction* between limits corresponding to the values *p*H 3 and *p*H 4. To the acidulated water, used for dissolving the powder, a sufficient proportion of some antiseptic to prevent the growth of any organism, which may be accidentally introduced in the process of removing a portion of the contents of the container, is added. The solution is sterilised by passage through a bacteria-proof filter, the potency is determined and the strength is adjusted. It is then distributed into sterilised containers, in which it is sealed.

Characters. Colourless liquid, free from turbidity and from matter which deposits on standing.

Tests for Purity. Complies with the *tests for sterility*.

Assay. Determine the potency by the *biological assay of insulin*, and express it in Units per millilitre.

Containers. The containers are glass phials, sealed so as to allow the withdrawal of successive doses on different occasions. The containers comply with the *tests for limit of alkalinity of glass*.

Storage. Injection of Insulin should be kept at as low a temperature as possible above its freezing-point, and should not be exposed to temperatures exceeding 20°. Under these conditions it may be expected to retain its potency for at least two years after the date of manufacture, provided that the *reaction* lies between the limits of *p*H 3 and *p*H 4.

Labelling. The label on each container states the number of Units per millilitre.

The label on the container, or the label or wrapper on the package states:—(1) the date of manufacture; (2) the date after which the preparation is not intended to be used.

DOSES

By Injection

The dose is determined by the physician in accordance with the needs of the patient.

When Injection of Insulin or Insulin is prescribed, Injection of Insulin, containing 20 Units per millilitre, shall be dispensed, unless a solution of some other strength is specified.

INJECTIO INSULINI PROTAMINATI CUM ZINCO

[Inj. Insulin. Protaminat. c. Zinc.]

Injection of Protamine Zinc Insulin

CAUTION.—In any part of the British Empire in which Protamine Zinc Insulin is controlled by law, care must be taken that the provisions of such law are duly complied with. (*See British Pharmacopœia, 1932, page 12.*)

Synonym. Protamine Zinc Insulin.

Injection of Protamine Zinc Insulin is a sterile suspension of the specific antidiabetic principle of the mammalian pancreas, a suitable protamine and zinc chloride, containing 40 or 80 Units per millilitre.

It may be prepared by the following method: A sterile solution of Insulin is assayed by the *biological assay of insulin* and its potency is adjusted so that, when diluted with the other constituents in sterile form, it contains the required number of Units per millilitre. A suitable protamine in the proportion of 0·75 to 1·25 milligrams of protamine sulphate for each 100 Units, a quantity of Zinc Chloride, equivalent to 0·2 milligram of zinc for each 100 Units, and 1·6 per cent. w/v of Glycerin, are added aseptically. A sufficient proportion of some antiseptic is added to prevent the growth of any organism which may be accidentally introduced in the process of withdrawing a portion of the contents of the containers. The solution is distributed aseptically into sterilised containers. To each container is added a sufficient quantity of a sterile solution of Sodium Phosphate, containing if necessary small amounts of sodium hydroxide or of phosphoric acid, so that the final mixture contains 0·010 to 0·011 gramme of Sodium Phosphate for every 100 Units of Insulin, and has a *reaction* which lies between *p*H 6·9 and *p*H 7·3. The containers are then sealed.

Characters. An almost colourless, turbid liquid.

Tests for Purity. Complies with the *tests for sterility*.

The clear supernatant liquid obtained by means of a centrifuge, or by filtration, does not contain more than 3·75 per cent. of the original activity, when tested by the *biological assay of insulin*.

Complies with the *test for retardation of the insulin effect*.

Assay. Add to the suspension 0·3 millilitre of *N/100 hydrochloric acid* per millilitre, in order to dissolve the precipitate, determine the potency by the *biological assay of insulin* (*rabbit method*) and express it in Units per millilitre.

Containers. The containers are glass phials, sealed so as to allow the withdrawal of successive doses on different occasions. The containers comply with the *tests for limit of alkalinity of glass*.

Storage. Injection of Protamine Zinc Insulin should be kept at as low a temperature as possible above its freezing-point, and should not be exposed to temperatures exceeding 20°. Under these conditions it may be expected to retain its potency for at least two years after the date of manufacture.

Labelling. The label on each container states the number of Units per millilitre.

The label on the container, or the label or wrapper on the package, states:—(1) the date of manufacture; (2) the date after which the preparation is not intended to be used; (3) that the containers should be carefully shaken before a dose is withdrawn.

DOSES

By injection

The dose is determined by the physician in accordance with the needs of the patient.

When Injection of Protamine Zinc Insulin or Protamine Zinc Insulin is prescribed, Injection of Protamine Zinc Insulin, containing 40 Units per millilitre, shall be dispensed, unless a preparation of some other strength is specified.

LIQUOR SODII CITRATIS ANTICOAGULANS

[Liq. Sod. Cit. Anticoag.]

Anticoagulant Solution of Sodium Citrate

Sodium Citrate	25 grammes
Sodium Chloride	9 grammes
Sterilised Water, sufficient to produce .	1000 millilitres

Dissolve the Sodium Citrate and Sodium Chloride in 900 millilitres of Sterilised Water, filter, add a sufficient quantity of Sterilised Water to produce 1000 millilitres, and sterilise by *heating in an autoclave* or by *filtration*.

Anticoagulant Solution of Sodium Citrate kept in a container which is closed with cotton wool is used within one month after its preparation. If kept in a container which is sealed by fusion of the glass, or by some equally effective method, it may be stored for a longer period.

LIQUOR SODII CITRATIS CUM DEXTROSO

[Liq. Sod. Cit. c. Dextros.]

Solution of Sodium Citrate with Dextrose

Sodium Citrate	30 grammes
Dextrose	30 grammes
Sterilised Water . . .	a sufficient quantity

Dissolve the Sodium Citrate in 900 millilitres of Sterilised Water, and filter. Add a sufficient quantity of Sterilised Water to produce 1000 millilitres; distribute the solution, in quantities of 100 millilitres, in blood transfusion bottles, or other suitable containers, and sterilise by *heating in an autoclave*.

This solution when kept in a glass container may cause the separation of small solid particles. A solution containing such particles must not be used.

Dissolve the Dextrose in 150 millilitres of Sterilised Water, and filter. Add a sufficient quantity of Sterilised Water to produce 200 millilitres, and sterilise by *heating in an autoclave*.

If either solution is stored in a container which is closed with cotton wool, it is used within one month after its preparation. If kept in a container which is sealed by fusion of the glass, or by some equally effective method, it may be stored for a longer period.

To make the required solution for use, add, with aseptic technique, 20 millilitres of the solution of Dextrose to each 100 millilitres of the solution of Sodium Citrate.

MENAPHTHONUM

[Menaphthon.]

Menaphthone

Synonym. Menadione.

Sixth Addendum to the British Pharmacopœia, 1932, pages 17 to 19, before **DOSES** *insert* :—

Sterilisation of a Solution. A solution of Menaphthone for intramuscular injection is prepared with a suitable oil or ester, and is distributed in the final containers, which are then either finally sealed or temporarily closed so as to exclude bacteria. When the volume in each container does not exceed 30 millilitres, the containers are heated at 150° for one hour. When the volume in each container exceeds 30 millilitres, the containers are heated for a longer time, sufficient to ensure that the whole of the solution in each container is maintained at 150° for one hour. Containers which have been temporarily closed are then finally sealed.

MISTURA SENNÆ COMPOSITA

[Mist. Senn. Co.]

Compound Mixture of Senna

Aromatic Solution of Ammonia may be used, in place of Aromatic Spirit of Ammonia, and a mixture of one part of Concentrated Compound Tincture of Cardamom and three volumes of water may be used, in place of Compound Tincture of Cardamom, in making this Mixture.

ŒSTRADIOLIS MONOBENZOAS

[Œstradiol. Monobenz.]

Œstradiol Monobenzoate

Synonyms. Dihydroxyœstrin monobenzoate : Estradiol benzoate.

$C_{25}H_{28}O_3$ . . . . . Mol. Wt. 376·22

Œstradiol monobenzoate is α-3 : 17-dihydroxy-$\Delta^{1:3:5}$-œstratriene-3-benzoate, and may be prepared by the reduction of œstrone and benzoylation of the α-œstradiol produced.

Characters. Colourless crystals; odourless.

Insoluble in *water* and in aqueous solutions of alkali hydroxides; slightly soluble in *alcohol (95 per cent.)*.

Tests for Identity. Boil 0·01 gramme for thirty minutes with 1 millilitre of *alcoholic solution of potassium hydroxide*, dilute with *water*, acidify with *dilute hydrochloric acid*, and shake with successive quantities of *ether*; wash the mixed ethereal solutions first with *solution of sodium bicarbonate*, then with *water*, and remove the ether; the residue complies with the following tests:—

Melting-point, 174° to 179°.

Heat 0·05 milligram with 1 millilitre of a 2·5 per cent. w/w solution of *β-naphthol* in *sulphuric acid* for two minutes at 100°, cool, and add 1 millilitre of *water*; an orange-yellow colour, which changes to red when the solution is heated for ninety seconds at 100°, is produced.

To 5 millilitres of a saturated aqueous solution add from 2 to 3 drops of *solution of mercury nitrate*; a red colour or precipitate develops on heating.

Tests for Purity. *Melting-point*, 190° to 195°; *specific rotation* at 20° in a 1 per cent. w/v solution in *dioxan* (sodium light), + 57° to + 63°.

Dissolve 0·0025 gramme in 0·5 millilitre of *solution of potassium hydroxide N/1 in dehydrated alcohol* and add 0·2 millilitre of a 2 per cent. w/v solution of *dinitrobenzene* in *dehydrated alcohol*; keep the mixture at 25°, protected from bright light, for one hour, and add 10 millilitres of *dehydrated alcohol*; the resultant colour, with an absorption band in the green, is less intense than that produced in a simultaneous test carried out with 0·0001 gramme of *œstrone* (limit of œstrone).

Sterilisation of a Solution. A solution of Œstradiol Monobenzoate for subcutaneous or intramuscular injection is prepared by aseptic methods with a suitable oil or ester, which has previously been heated at 150° for one hour. The solution is transferred to previously sterilised containers, and these are sealed so as to exclude bacteria.

Labelling of a Solution. The label on the container states the number of milligrams of Œstradiol Monobenzoate and the number of Units in 1 millilitre.

DOSES

By subcutaneous or intramuscular injection.

Metric.	Imperial.
0·0001 to 0·005 gramme.	$^1/_{600}$ to $^1/_{12}$ grain.

1000 to 50,000 Units.

NOTE.—The Unit to be used in expressing dosage is the Unit of œstrogenic activity (benzoate standard) defined by the Permanent Commission on Biological Standards of the Health Organisation of the League of Nations, namely, the specific œstrus-producing activity contained in 0·1 γ (0·0001 milligram) of the standard preparation of the monobenzoate of the dihydroxy form of the hormone kept in the National Institute for Medical Research, Hampstead, London.

ŒSTRONUM

[Œstron.]

Œstrone

Synonyms. Ketohydroxyœstrin: Estronum.

$C_{18}H_{22}O_2$ . . . . . Mol. Wt. 270·17

Œstrone is 3-hydroxy-17-keto-$\Delta^{1:3:5}$-œstratriene, and may be prepared from the urine of certain mammals.

Characters. Colourless crystals; odourless.

Very sparingly soluble in *water*; slightly soluble in *dehydrated alcohol*, in *alcohol* (*95 per cent.*) and in *ether*; soluble in *chloroform*, in *acetone*, in *benzene*, and in fixed oils, and in aqueous solutions of alkali hydroxides. It may be extracted from ethereal solutions by shaking with *N/1 sodium hydroxide*.

Tests for Identity. Heat 0·05 milligram with 1 millilitre of a 2·5 per cent. w/w solution of *β-naphthol* in *sulphuric acid* for two minutes at 100°, cool, and add 1 millilitre of *water*; an orange-yellow colour, which changes to red when the solution is heated for ninety seconds at 100°, is produced.

To 5 millilitres of a saturated aqueous solution add 2 to 3 drops of *solution of mercury nitrate*; a red colour or precipitate develops on heating.

Dissolve about 0·05 gramme in 5 millilitres of a mixture of equal volumes of *acetone* and *test-solution of sodium hydroxide*, and gradually add, with vigorous shaking, 0·5 millilitre of *benzoyl chloride*; *melting-point* of the precipitated benzoyl derivative, after recrystallisation from a mixture of equal volumes of *acetone* and *water*, 218° to 222°.

Tests for Purity. *Melting-point*, 254° to 262°; *specific rotation* at 20° in a 1 per cent. w/v solution in *dioxan* (sodium light), + 158° to + 166°; *ultra-violet absorption* in *dehydrated alcohol FT* at 280mμ, 80 to 90.

Sterilisation of a Solution. A solution of Œstrone for subcutaneous or intramuscular injection is prepared by the method described under 'Œstradiolis Monobenzoas'.

Labelling of a Solution. The label on the container states the number of milligrams of Œstrone and the number of Units in 1 millilitre.

DOSES

Orally or by subcutaneous or intramuscular injection.

Metric.	Imperial.
0·0001 to 0·01 gramme.	1/6000 to 1/6 grain.

1000 to 100,000 Units.

NOTE.—The Unit to be used in expressing dosage is the Unit of œstrogenic activity (œstrone standard) defined by the Permanent Commission on Biological Standards of the Health Organisation of the League of Nations, namely, the specific œstrus-producing activity contained in 0·1 γ (0·0001 milligram) of the standard preparation of œstrone kept in the National Institute for Medical Research, Hampstead, London.

OLEUM HIPPOGLOSSI

[Ol. Hippogloss.]

Halibut-liver Oil

See Fourth Addendum to the British Pharmacopœia, 1932, page 23.

The requirement for *iodine value of glycerides* is changed from '112 to 130' to '112 to 150'.

OLEUM LIMONIS

[Ol. Limon.]

Oil of Lemon

British Pharmacopœia, 1932, page 308; Addendum 1936, page 50.

The following requirements are amended:—

The content of aldehydes, calculated as citral, $C_{10}H_{16}O$, is changed from '4 per cent. w/w' to '2·5 per cent. w/w'.

The *specific gravity* (15·5°/15·5°) is changed from '0·857 to 0·861' to '0·855 to 0·861'.

The non-volatile residue from 5 grammes is changed from 'not less than 0·1 gramme and not more than 0·15 gramme' to 'not less than 0·075 gramme and not more than 0·15 gramme'.

OLEUM MYRISTICÆ

[Ol. Myrist.]

Oil of Nutmeg

British Pharmacopœia, 1932, page 311; Addendum 1936, page 52.

The following requirements are amended:—

The solubility in alcohol is changed from 'Soluble in 3 volumes of *alcohol (90 per cent.)*' to 'Soluble in 4 volumes of *alcohol (90 per cent.)*, the solution sometimes depositing crystals on standing'.

The *specific gravity* (15·5°/15·5°) is changed from '0·880 to 0·925' to '0·865 to 0·925'.

The *optical rotation* is changed from '+ 10° to + 30°' to '+ 10° to + 45°'.

The *refractive index* at 20° is changed from '1·474 to 1·488' to '1·472 to 1·488'.

PANCREATINUM

[Pancreatin.]

Pancreatin

Sucrose may be used, in place of Lactose, in making Pancreatin.

PARAFFINUM LIQUIDUM

[Paraff. Liq.]

Liquid Paraffin

The requirement ' remains clear when dried, cooled to 0° and kept at that temperature for four hours (limit of solid paraffins) ' is deleted.

PENTOBARBITONUM SOLUBILE

[Pentobarbiton. Solub.]

Soluble Pentobarbitone

Synonym. Pentobarbital Sodium.

$(C_2H_5)(C_5H_{11})C{\cdot}CO{\cdot}NH{\cdot}CO{\cdot}NNa{\cdot}CO$. Mol. Wt. 248·15

Soluble Pentobarbitone is the mono-sodium derivative of 5-ethyl-5-(1-methylbutyl)-barbituric acid, and may be obtained by the interaction in alcoholic solution of this substance and sodium ethoxide. It contains not less than 98·5 per cent., and not more than the equivalent of 101 per cent., of $C_{11}H_{17}O_3N_2Na$, calculated with reference to the substance dried at 90° for six hours.

Characters. A white crystalline powder, or granules; odourless; taste, slightly bitter.

Very soluble in *water* and in *alcohol*; almost insoluble in *ether*.

Tests for Identity. A 10 per cent. w/v solution in *water* is alkaline to *solution of litmus*.

Dissolve 0·1 gramme in 3 millilitres of *water*, and acidify with *dilute hydrochloric acid*; a white precipitate is produced.

Boil 0·2 gramme with 5 millilitres of *test-solution of sodium hydroxide*; ammonia is evolved.

Dissolve about 0·1 gramme in 3 millilitres of *water*, and add 1 millilitre of *test-solution of mercuric chloride*; a white precipitate, which is soluble in *dilute solution of ammonia*, is produced.

Dissolve about 0·15 gramme in 5 millilitres of *water* and add 5 millilitres of *solution of silver nitrate*; a white precipitate, which is soluble in *dilute solution of ammonia*, is produced.

Melting-point of the residue obtained in the Assay, 127° to 130°.

Incinerate about 0·1 gramme; the residue yields the *reactions* characteristic of sodium.

Tests for Purity. Dissolve 1 gramme in 10 millilitres of freshly boiled and cooled *water*; it dissolves rapidly and completely, giving a clear, colourless solution which does not show any opalescence after one hour.

Dissolve 1 gramme in a mixture of 2 millilitres of *test-solution of sodium hydroxide* and 13 millilitres of *water*, and shake with 25 millilitres of *ether* for one minute; separate the ethereal solution, and wash with three successive quantities, each of 5 millilitres, of *water*; remove the ether and dry the residue at 100°; the residue weighs not more than 0·005 gramme (limit of neutral and basic substances).

Lead limit, 10 parts per million.

Loses, when dried at 90° for six hours, not more than 5 per cent. of its weight.

Assay. Dissolve about 0·5 gramme, accurately weighed, in 50 millilitres of *water*, add 10 millilitres of *dilute hydrochloric acid* and shake with successive quantities, each of 25 millilitres, of *ether* until complete extraction is effected. Wash the combined ethereal solutions with two successive quantities, each of 5 millilitres, of *water*, remove the ether by evaporation and dry the residue of $C_{11}H_{18}O_3N_2$ to constant weight at 90°. 1 gramme of $C_{11}H_{18}O_3N_2$ is equivalent to 1·097 grammes of $C_{11}H_{17}O_3N_2Na$.

Storage. Soluble Pentobarbitone should be kept in a well-closed container.

DOSES

Metric.	Imperial.
0·1 to 0·2 gramme.	1½ to 3 grains.

PEPSINUM

[Pepsin.]

Pepsin

Sucrose may be used, in place of Lactose, in making Pepsin.

POTASSII SULPHAS

[Pot. Sulph.]

Potassium Sulphate

K_2SO_4 . . . . . Mol. Wt. 174·3

Potassium sulphate may be obtained by the interaction of sulphuric acid and potassium chloride, or certain other potassium salts. It contains not less than 99 per cent. of K_2SO_4.

Characters. Colourless crystals, or a white crystalline powder, odourless; taste, saline and slightly bitter.

Soluble in 10 parts of *water*; insoluble in *alcohol (90 per cent.)*.

Tests for Identity. Yields the *reactions* characteristic of potassium, and of sulphates.

Tests for Purity. A 2 per cent. w/v solution in *water* is not acid to *solution of methyl orange* (absence of acid sulphate).

Dissolve 1 gramme in 10 millilitres of warm *water* and add *dilute solution of ammonia*; no blue colour is produced (limit of copper); add *solution of hydrogen sulphide*; no precipitate is produced (limit of zinc).

Dissolve 1 gramme in 20 millilitres of *water*, add 1 millilitre of *dilute solution of ammonia*, and boil; no precipitate is produced (limit of aluminium).

0·3 gramme complies with the *limit test for chlorides*.

0·4 gramme complies with the *limit test for iron*.

Arsenic limit, 5 parts per million. *Lead limit*, 20 parts per million.

Assay. Carry out the Assay as directed under 'Sodii Sulphas.' 1 gramme of the precipitate is equivalent to 0·7467 gramme of K_2SO_4.

DOSES

Metric	Imperial
1 to 3 grammes.	15 to 45 grains.

PROGESTERONUM

[Progesteron.]

Progesterone

Synonym. Progestin.

$C_{21}H_{30}O_2$ . . . . . Mol. Wt. 314·2

Progesterone is 3 : 20-diketo-Δ^4-pregnene. It may be prepared from the corpora lutea of the ovaries of sows or other mammals, or from stigmasterol, pregnanediol, or cholesterol.

Characters. Colourless crystals; odourless.

Insoluble in *water*; readily soluble in *alcohol*, in *ether*, in *chloroform*, in *acetone*, in *benzene*, and in fixed oils; moderately soluble in *light petroleum*.

Test for Identity. Dissolve 0·0085 gramme in 1·5 millilitres of *alcohol (90 per cent.)* containing an excess of *hydroxylamine hydrochloride* and one drop of *glacial acetic acid*, and heat in a vessel fitted with a reflux condenser for two hours; remove most of the alcohol, and add 0·5 millilitre of *water*; progesterone dioxime separates in leaf-shaped aggregates; *melting-point*, after recrystallisation from dilute alcohol, 238°.

Tests for Purity. *Melting-point*, 128° to 131°; *specific rotation* at 20° in a 1 per cent. w/v solution in *dehydrated alcohol* (sodium light), + 186° to + 196°; *ultra-violet absorption* in *dehydrated alcohol FT* at 241 mμ, about 550.

Sterilisation of a Solution. A solution of Progesterone for subcutaneous or intramuscular injection is prepared by the method described under 'Œstradioli Monobenzoas'.

Labelling of a Solution. The label on the container states the number of milligrams of Progesterone and the number of Units in 1 millilitre.

DOSES

By subcutaneous or intramuscular injection.

Metric.	Imperial.
0·001 to 0·005 gramme.	$^1/_{60}$ to $^1/_{12}$ grain.
1 to 5 Units.	

NOTE.—The Unit to be used in expressing dosage is the Unit for the progestational hormone defined by the Permanent Commission on Biological Standards of the Health Organisation of the League of Nations, namely, the specific progestational activity of 1 milligram of the standard preparation of progesterone kept in the National Institute for Medical Research, Hampstead, London.

PULVIS IPECACUANHÆ ET OPII

[Pulv. Ipecac. et Opii]

Powder of Ipecacuanha and Opium

Potassium Sulphate may be used, in place of Lactose, in making this preparation.

STILBŒSTROL

[Stilbœstr.]

Stilbœstrol

Synonym. Diethylstilbœstrol.

Sixth Addendum to the British Pharmacopœia, 1932, pages 25 to 26, before **DOSES** *insert* :—

Sterilisation of a Solution. A solution of Stilbœstrol for intramuscular injection is prepared by the method described under 'Menaphthonum'.

STROPHANTHINUM-G

[Strophanthin.-G]

Strophanthin-G

Synonyms. Ouabain : G-Strophanthin.

$C_{29}H_{44}O_{12},8H_2O$ . . . . . Mol. Wt. 728·5

Strophanthin-G is a crystalline glycoside which may be obtained from the seeds of *Strophanthus gratus* Franch, or from the wood of *Acokanthera Schimperi* (A.D.C.) Schwinf.

Characters. Small, colourless crystals, or a white, crystalline powder ; odourless ; taste, bitter.

Soluble in about 100 parts of *water* ; soluble in *dehydrated alcohol* ; almost insoluble in *ether* and in *chloroform*.

Tests for Identity. *Melting-point*, when dried at 100° in a vacuum, about 200°, after sintering at 185°.

Moisten a small quantity with a drop of *sulphuric acid* ; a red or brownish-red colour is produced.

Dissolve a small quantity in a cold mixture of 4 volumes of *sulphuric acid* and 1 volume of *water* ; no green colour is produced (distinction from K-Strophanthin) but a pink colour develops which on standing deepens to red with a green fluorescence.

Moisten a small quantity with a drop of a 5 per cent. w/v solution of *ammonium vanadate* in *water* and evaporate to dryness ; cool, and add a drop of *sulphuric acid* ; a green colour is produced.

Moisten a small quantity with *solution of ammonium molybdate* and evaporate to dryness ; cool, and add a drop of *sulphuric acid* ; a blue colour is produced.

Tests for Purity. *Specific rotation*, after drying in a vacuum at 100°, in 2·5 per cent. w/v solution in *methyl alcohol*, − 39·8° to − 40·8°.

A 1 per cent. w/v solution in *water* gives no precipitate with *solution of tannic acid* (absence of K-Strophanthin).

Loses, when dried at 100° in a vacuum, not less than 19 per cent. and not more than 21·5 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Storage. Strophanthin-G should be kept in a well-closed container.

Sterilisation of a Solution. A solution of Strophanthin-G for parenteral injection is sterilised by *heating in an autoclave*, or by *filtration*.

DOSES

By intravenous injection

Metric.	Imperial.
0·00012 to 0·0005 gramme.	$^1/_{500}$ to $^1/_{120}$ grain.

SULPHACETAMIDUM

[Sulphacetamid.]

Sulphacetamide

$NH_2{\cdot}C_6H_4{\cdot}SO_2NH{\cdot}COCH_3$ [$NH_2 : SO_2NH{\cdot}COCH_3 = 1 : 4$]

Mol. Wt. 214·2

Sulphacetamide is *p*-aminobenzenesulphonacetamide, and may be prepared by the acetylation of sulphanilamide with acetic anhydride, followed by the hydrolysis of one acetyl group of the *p*-acetamidobenzenesulphonacetamide so formed. It contains not less than 99·0 per cent. of $C_8H_{10}O_3N_2S$, calculated with reference to the substance dried at 100°.

Characters. A white, or yellowish-white, crystalline powder; odourless; taste, acid and slightly saline.

Soluble in 150 parts of *water* at 20°, and in 15 parts of *alcohol (95 per cent.)*; insoluble in *ether*; soluble in 7 parts of *acetone*; soluble in mineral acids and in solutions of alkali carbonates.

Tests for Identity. An aqueous solution is acid to *solution of litmus*.

Dissolve about 0·05 gramme in 2 millilitres of warm *dilute hydrochloric acid*; cool in ice and add 2 millilitres of a 1 per cent. w/v solution of *sodium nitrite* in *water*; add 2 millilitres of *water* and 1 millilitre of *solution of β-naphthol*; an orange precipitate is produced.

When heated with *alcohol (95 per cent.)* and *sulphuric acid*, the odour of ethyl acetate is recognisable (distinction from certain other sulphonamides).

Tests for Purity. *Melting-point*, 181° to 184°.

1 gramme dissolves completely and immediately in 5 millilitres of a mixture of equal volumes of *dilute hydrochloric acid* and *water* (limit of *p*-acetamidobenzenesulphonacetamide).

1 gramme dissolves completely in 10 millilitres of *2N sodium carbonate* (limit of sulphanilamide).

1 gramme, dissolved in a mixture of 5 millilitres of *water* and 1 millilitre of *nitric acid*, complies with the *limit test for chlorides*.

1 gramme, dissolved in a mixture of 5 millilitres of water and 1 millilitre of *hydrochloric acid*, complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 100°, not more than 0·5 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02142 gramme of $C_8H_{10}O_3N_2S$.

Storage. Sulphacetamide should be kept in a well-closed container.

Sterilisation. Sulphacetamide is prepared as a sterile powder by powdering the crystals finely, drying at 100°, distributing the powder in the final containers, closing the containers either finally or temporarily, and heating so as to maintain the whole of the powder at 150° for one hour; the containers which were temporarily closed are then finally closed so as to exclude bacteria. If the containers are closed by means of a plug of non-absorbent cotton wool, the contents are used within one month of sterilisation. Sulphacetamide which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHACETAMIDUM SOLUBILE

[Sulphacetamid. Solub.]

Soluble Sulphacetamide

$NH_2{\cdot}C_6H_4{\cdot}SO_2NNa{\cdot}COCH_3,H_2O$ [$NH_2 : SO_2{\cdot}NNa{\cdot}COCH_3 = 1 : 4$]

Mol. Wt. 254·2

Soluble Sulphacetamide is sodium *p*-aminobenzenesulphonacetamide and may be prepared by the addition of alcohol to a strong aqueous solution prepared by adding sodium hydroxide in aqueous solution to the molecular equivalent of sulphacetamide in aqueous suspension. It contains not less than 99·0 per cent. of $C_8H_9O_3N_2SNa$, calculated with reference to the substance dried at 150°.

Characters. A white, or yellowish-white, micro-crystalline powder; odourless taste, slightly bitter.

Soluble in 1·5 parts of *water*; sparingly soluble in *alcohol (95 per cent.)* and in *acetone*.

Tests for Identity. *Reaction* of a 10 per cent. w/v solution in *water*, about *p*H 9·0.

Dissolve about 1 gramme in 10 millilitres of *water* and add 2 millilitres of *acetic acid*; a white precipitate is produced. Collect the precipitate, wash with cold *water* and dry at 100° for four hours; the residue has the *melting-point*, 181° to 184°, and complies with the Tests for Identity described under 'Sulphacetamidum'.

Incinerate about 0·5 gramme; the residue yields the *reactions* characteristic of sodium.

Tests for Purity. 1 gramme complies with the *limit test for chlorides*, and with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for*

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million. Loses, when dried at 150°, not more than 7·6 per cent. of its weight.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02362 gramme of $C_8H_9O_3N_2SNa$.

Storage. Soluble Sulphacetamide should be kept in a well-closed container.

Sterilisation of a Solution. A solution of Soluble Sulphacetamide for parenteral injection is prepared with freshly prepared Distilled Water which has been boiled until free from carbon dioxide. The solution is distributed, with as little exposure to air as possible, in suitable containers holding a single dose, which are immediately finally sealed, and sterilised by exposure to saturated steam at 115° to 116° for thirty minutes. A solution which has been sterilised in this manner shows not more than a slight discoloration

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHADIAZINA

[Sulphadiazin.]

Sulphadiazine

Mol. Wt. 250·17

Sulphadiazine is 2-(*p*-aminobenzenesulphonamido)-pyrimidine, and may be prepared by the condensation of *p*-acetamidobenzenesulphonyl chloride with 2-aminopyrimidine, followed by hydrolysis of the acetyl group by heating with aqueous sodium hydroxide solution. It contains not less than 99·0 per cent. of $C_{10}H_{10}O_2N_4S$, calculated with reference to the substance dried at 105°.

Characters. A white, or yellowish-white, powder, which slowly darkens on exposure to light; almost odourless and tasteless.

Soluble in about 13,000 parts of *water* at 25°; sparingly soluble in *alcohol* and in *acetone*; readily soluble in dilute mineral acids and in aqueous solutions of alkali hydroxides.

Tests for Identity. Dissolve about 0·05 gramme in 2 millilitres of warm *dilute hydrochloric acid*; cool in ice and add 2 millilitres of a 1 per cent. w/v solution of *sodium nitrite* in *water*; add 2 millilitres of *water* and 1 millilitre of *solution of β-naphthol*; an orange precipitate is produced.

Heat about 0·05 gramme in a dry tube until it melts; a reddish-brown colour is produced, and the fumes which are evolved do not discolour moistened *lead acetate paper* (distinction from certain other sulphonamides).

Dissolve 0·01 gramme in a mixture of 10 millilitres of *water* and 2 millilitres of *N/10 sodium hydroxide*, add 0·5 millilitre of *solution of copper sulphate*; an olive-green precipitate, which becomes purple-grey on standing, is produced (distinction from certain other sulphonamides).

Tests for Purity. *Melting-point*, 252° to 256°.

Heat 1 gramme with 50 millilitres of *water* at about 70° for five minutes, cool quickly to 20° and filter; 25 millilitres of the filtrate requires for

neutralisation not more than 0·2 millilitre of *N/10 sodium hydroxide, solution of phenolphthalein* being used as indicator (limit of acidity).

1 gramme dissolved, by warming, in 5 millilitres of *nitric acid* and 5 millilitres of *water* complies with the *limit test for chlorides.*

1 gramme dissolved, by warming, in 5 millilitres of *hydrochloric acid* and 5 millilitres of *water*, complies with the *limit test for sulphates.*

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*: cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron.*

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 105° for four hours, not more than 0·5 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. Carry out the Assay as directed under 'Sulphanilamidum', warming, if necessary, to effect solution of the sulphadiazine. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02502 gramme of $C_{10}H_{10}O_2N_4S$.

Storage. Sulphadiazine should be kept in a well-closed container, protected from light.

Sterilisation. Sulphadiazine is prepared as a sterile powder by the method described under 'Sulphacetamidum'. Sulphadiazine which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

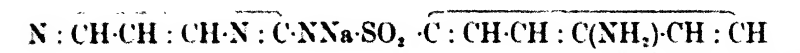
Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHADIAZINA SOLUBILIS

[Sulphadiazin. Solub.]

Soluble Sulphadiazine

Synonyms. Sulfadiazinum Sodicum: Sulfadiazine Sodium.



Mol. Wt. 272·16

Soluble Sulphadiazine is the sodium derivative of 2-(*p*-aminobenzenesulphonamido)-pyrimidine and may be obtained by the interaction of this substance and sodium hydroxide. It contains not less than 99·0 per cent. of $C_{10}H_9O_2N_4SNa$, calculated with reference to the substance dried at 105° for four hours.

Characters. A white, or yellowish-white, powder; odourless; almost tasteless.

Soluble in 2 parts of *water* at 25°; sparingly soluble in *alcohol.*

Tests for Identity. An aqueous solution is alkaline to *solution of phenolphthalein.*

Dissolve about 1 gramme in 25 millilitres of *water*, and add 2 millilitres of *acetic acid*; a white precipitate is produced. Collect the precipitate, wash with cold *water* and dry at 100° for four hours; the residue has the *melting-point*, 252° to 256°, and complies with the Tests for Identity described under 'Sulphadiazina'.

Incinerate about 0·5 gramme; the residue yields the *reactions* characteristic of **sodium**.

Tests for Purity. 1 gramme dissolved in 5 millilitres of *nitric acid* and 20 millilitres of *water* complies with the *limit test for chlorides*.

1 gramme dissolved in 5 millilitres of *hydrochloric acid* and 5 millilitres of *water* complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 105° for four hours, not more than 0·5 per cent. of its weight.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02722 gramme of $C_{10}H_9O_2N_4SNa$.

Storage. Soluble Sulphadiazine should be kept in a well-closed container, protected from light.

Sterilisation of a Solution. A solution of Soluble Sulphadiazine for parenteral injection is prepared by the method described under 'Sulphacetamidum Solubile'. A solution which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHAGUANIDINA

[Sulphaguanidin.]

Sulphaguanidine

$NH_2{\cdot}C_6H_4{\cdot}SO_2{\cdot}N{:}C(NH_2)_2,H_2O$ [$NH_2 : SO_2N{:}C(NH_2)_2 = 1:4$]

Mol. Wt. 232·26

Sulphaguanidine is *p*-aminobenzenesulphonylguanidine monohydrate and may be prepared by the fusion of dicyandiamide with *p*-aminobenzenesulphonamide. It contains not less than 99·0 per cent. of $C_7H_{10}O_2N_4S$, calculated with reference to the substance dried at 110° for four hours.

Characters. A white, needle-like, crystalline powder, which slowly darkens on exposure to light; almost odourless, and tasteless.

Soluble in about 1000 parts of *water* at 25° and in about 10 parts of *water* at 100°; sparingly soluble in *alcohol* and in *acetone*; readily soluble in dilute mineral acids, and insoluble in aqueous solutions of alkali hydroxides.

Tests for Identity. Dissolve about 0·05 gramme in 2 millilitres of warm *dilute hydrochloric acid*; cool in ice and add 2 millilitres of a 1 per cent. w/v solution of *sodium nitrite* in *water*; add 2 millilitres of *water* and 1 millilitre of *solution of β-naphthol*; an orange precipitate is produced.

To 0·2 gramme add 5 millilitres of *test-solution of sodium hydroxide*, the powder does not dissolve in the cold, but, when heated to boiling, it dis-

solves and the odour of ammonia is recognisable (distinction from certain other sulphonamides).

Tests for Purity. *Melting-point*, after drying at 110° for four hours, 190° to 192·5°.

Heat 1 gramme with 50 millilitres of *water* at about 70° for five minutes, cool quickly to 20° and filter; 25 millilitres of the filtrate requires for neutralisation not more than 0·1 millilitre of *N/10 sodium hydroxide, solution of phenolphthalein* being used as indicator (limit of acidity).

1 gramme dissolved, by warming, in 1 millilitre of *nitric acid* and 15 millilitres of *water*, complies with the *limit test for chlorides*.

1 gramme dissolved, by warming, in 1 millilitre of *hydrochloric acid* and 9 millilitres of *water*, complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 110° for four hours, not more than 8·0 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M 10 sodium nitrite* is equivalent to 0·02142 gramme of $C_7H_{10}O_2N_4S$.

Storage. Sulphaguanidine should be kept in a well-closed container, protected from light.

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHANILAMIDUM

[Sulphanilamid.

Sulphanilamide

Fourth Addendum to the British Pharmacopœia, 1932, page 33, *delete* lines 6 to 14, *insert*:—

Assay. Dissolve about 0·5 gramme, accurately weighed, in 75 millilitres of *water* and 10 millilitres of *hydrochloric acid*. Cool the solution, and titrate slowly with *M/10 sodium nitrite* at a temperature not higher than 15° until the solution immediately gives a blue colour, when a drop is quickly drawn by means of a fine glass rod across the surface of a film of *starch-iodide paste*. The titration is complete when the end-point is reproduced after the titrated solution has been allowed to stand for two minutes. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·01721 gramme of $C_6H_8O_2N_2S$.

SULPHAPYRIDINA

[Sulphapyridin.]

Sulphapyridine

$\overline{N : CH{\cdot}CH : CH{\cdot}CH : C}{\cdot}NH{\cdot}SO_2{\cdot}\overline{C : CH{\cdot}CH : C(NH_2){\cdot}CH : CH}$

Mol. Wt. 249·17

Sulphapyridine is 2-(*p*-aminobenzenesulphonamido)-pyridine and may be prepared by the condensation of *p*-acetamidobenzenesulphonyl chloride with 2-aminopyridine, followed by hydrolysis of the acetyl group by heating with aqueous sodium hydroxide solution. It contains not less than 99·0 per cent. of $C_{11}H_{11}O_2N_3S$, calculated with reference to the substance dried at 100°.

Characters. White, or yellowish-white, crystals or crystalline powder, which slowly darken on exposure to light; odourless; taste, very slightly bitter.

Soluble in 3000 parts of *water* at 20°, in 100 parts of boiling *water*, in 400 parts of *alcohol* (*95 per cent.*), in *acetone*, in dilute mineral acids and in aqueous solutions of alkali hydroxides.

Tests for Identity. Dissolve about 0·05 gramme in 2 millilitres of warm *dilute hydrochloric acid*; cool in ice and add 2 millilitres of a 1 per cent. w/v solution of *sodium nitrite* in *water*; add 2 millilitres of *water* and 1 millilitre of *solution of β-naphthol*; an orange-red precipitate, which darkens on standing, is produced.

Heat about 0·01 gramme in a dry tube until it melts; a brown colour is produced and, on further heating, yellow fumes are evolved and the odour of sulphur dioxide is recognisable (distinction from certain other sulphonamides).

Dissolve about 0·01 gramme in a mixture of 10 millilitres of *water* and 2 millilitres of *N/10 sodium hydroxide*, and add 0·5 millilitre of *solution of copper sulphate*; a green precipitate, which becomes greyish on standing, is produced (distinction from certain other sulphonamides).

Tests for Purity. *Melting-point*, 191° to 193°.

Heat 1 gramme with 50 millilitres of *water* at about 70° for five minutes, cool quickly to 20° and filter; 25 millilitres of the filtrate requires for neutralisation not more than 0·25 millilitre of *N/10 sodium hydroxide*, *solution of phenolphthalein* being used as indicator (limit of acidity).

1 gramme, dissolved in a mixture of 5 millilitres of *water* and 1 millilitre of *nitric acid*, complies with the *limit test for chlorides*.

1 gramme, dissolved in a mixture of 5 millilitres of *water* and 1 millilitre of *hydrochloric acid*, complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*; dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 100°, not more than 0·5 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02492 gramme of $C_{11}H_{11}O_2N_3S$.

Storage. Sulphapyridine should be kept in a well-closed container, protected from light.

Sterilisation. Sulphapyridine is prepared as a sterile powder by the method described under 'Sulphacetamidum'. Sulphapyridine which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

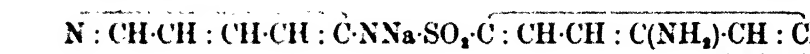
Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHAPYRIDINA SOLUBILIS

[Sulphapyridin. Solub.]

Soluble Sulphapyridine

Synonyms. Sulfapyridinum Sodicum : Sulfapyridine Sodium.



Mol. Wt. 271·16

Soluble Sulphapyridine is the sodium derivative of 2-(*p*-aminobenzenesulphonamido)-pyridine with, or without, water of crystallisation, and may be obtained by the interaction of this substance and sodium hydroxide. It contains not less than 99·0 per cent. of $C_{11}H_{10}O_2N_3SNa$, calculated with reference to the substance dried at 105° for four hours.

Characters. A white, or yellowish-white, crystalline powder; odourless; taste, very slightly bitter.

Soluble in about 3 parts of *water* and in about 10 parts of *alcohol (95 per cent.)*.

Tests for Identity. An aqueous solution is alkaline to *solution of phenolphthalein*.

Dissolve about 1 gramme in 25 millilitres of *water* and add 2 millilitres of *acetic acid*; a white precipitate is produced. Collect the precipitate, wash with cold *water* and dry at 100° for four hours; the residue has the *melting-point*, 191° to 193°, and complies with the Tests for Identity described under 'Sulphapyridina'.

Incinerate about 0·5 gramme; the residue yields the *reactions* characteristic of sodium.

Tests for Purity. 1 gramme complies with the *limit test for chlorides*, and with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 105° for four hours, not more than 7 per cent. of its weight.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02712 gramme of $C_{11}H_{10}O_2N_3SNa$.

Storage. Soluble Sulphapyridine should be kept in a well-closed container, protected from light.

Sterilisation of a Solution. A solution of Soluble Sulphapyridine for parenteral injection is prepared by the method described under 'Sulphacetamidum Solubile'. A solution which has been sterilised in this manner shows not more than a slight discoloration.

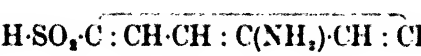
DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHATHIAZOLUM

[Sulphathiazol.]

Sulphathiazole



$S{\cdot}CH : CH{\cdot}N : C{\cdot}NH{\cdot}SO_2{\cdot}C : CH{\cdot}CH : C(NH_2){\cdot}CH : CH$ Mol. Wt. 255·21

Sulphathiazole is 2-(*p*-aminobenzenesulphonamido)-thiazole, and may be prepared by the condensation of *p*-acetamidobenzenesulphonyl chloride with 2-aminothiazole, followed by hydrolysis of the acetyl group by heating with dilute hydrochloric acid or sodium hydroxide solution. It contains not less than 99·0 per cent. of $C_9H_9O_2N_3S_2$, calculated with reference to the substance dried at 100°.

Characters. A white, or yellowish-white, powder; odourless; almost tasteless. Soluble in about 2500 parts of *water*; slightly soluble in *alcohol (95 per cent.)*; soluble in dilute mineral acids and in solutions of alkali hydroxides and carbonates.

Tests for Identity. Dissolve about 0·05 gramme in 2 millilitres of warm *dilute hydrochloric acid*; cool in ice and add 2 millilitres of a 1 per cent. w/v solution of *sodium nitrite* in *water*; add 2 millilitres of *water* and 1 millilitre of *solution of β-naphthol*; an orange-red precipitate, which darkens on standing, is produced.

Heat about 0·05 gramme in a dry tube until it melts; a brown to red colour is produced, and, on further heating, the odours of ammonia, aniline and hydrogen sulphide are recognisable (distinction from certain other sulphonamides).

Dissolve 0·01 gramme in a mixture of 10 millilitres of *water* and 2 millilitres of *N/10 sodium hydroxide*, add 0·5 millilitre of a *solution of copper sulphate*; a greyish-purple precipitate is produced (distinction from certain other sulphonamides).

Tests for Purity. *Melting-point*, 200° to 203°.

Heat 1 gramme with 50 millilitres of *water* at about 70° for five minutes, cool quickly to 20°, and filter; 25 millilitres of the filtrate requires for neutralisation not more than 0·5 millilitre of *N/10 sodium hydroxide*, *solution of phenolphthalein* being used as indicator (limit of acidity).

1 gramme, dissolved in 20 millilitres of *water* with the addition of 1 millilitre of *nitric acid*, complies with the *limit test for chlorides*.

1 gramme, dissolved in 20 millilitres of *water* with the addition of 1 millilitre of *hydrochloric acid*, complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a

faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million. Loses, when dried at 100°, not more than 0·5 per cent. of its weight. Leaves, on incineration, not more than 0·05 per cent. of residue.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02552 gramme of $C_9H_9O_2N_3S_2$.

Storage. Sulphathiazole should be kept in a well-closed container, protected from light.

Sterilisation. Sulphathiazole is prepared as a sterile powder by the method described under 'Sulphacetamidum'. Sulphathiazole which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

SULPHATHIAZOLUM SOLUBILE

[Sulphathiazol. Solub.]

Soluble Sulphathiazole

Synonyms. Sulfathiazolum Sodicum : Sulfathiazole Sodium.

$\overbrace{S{\cdot}CH : CH{\cdot}N : C{\cdot}NNa{\cdot}SO_2{\cdot}C : CH{\cdot}CH : C(NH_2){\cdot}CH}^{} : CH, 5H_2O$

Mol. Wt. 367·28

Soluble Sulphathiazole is the pentahydrate of the sodium derivative of 2-(*p*-aminobenzenesulphonamido)-thiazole and may be obtained by the interaction of this substance and sodium hydroxide. It contains not less than 99·0 per cent. of $C_9H_8O_2N_3S_2Na$, calculated with reference to the substance dried at 120° for five hours.

Characters. A white, or yellowish-white, micro-crystalline powder, odourless; almost tasteless.

Soluble in about 3 parts of *water*, and in about 20 parts of *alcohol (95 per cent.)*

Tests for Identity. An aqueous solution is alkaline to *solution of phenolphthalein*.

Dissolve 1 gramme in 25 millilitres of *water*, and add 2 millilitres of *acetic acid*; a white precipitate is produced. Collect the precipitate, wash with cold *water* and dry at 100° for four hours; the residue has the *melting-point*, 200° to 203°, and complies with the Tests for Identity described under 'Sulphathiazolum'.

Incinerate about 0·5 gramme; the residue yields the *reactions* characteristic of sodium.

Tests for Purity. 1 gramme, dissolved in *water* with the addition of 2 millilitres of *nitric acid*, complies with the *limit test for chlorides*.

1 gramme, dissolved in *water* with the addition of 2 millilitres of *hydrochloric acid*, complies with the *limit test for sulphates*.

Ignite 1 gramme with 1 gramme of *anhydrous sodium carbonate*; cool, dissolve the residue in 15 millilitres of *dilute hydrochloric acid*, dilute to 45 millilitres with *water*, and add *N/10 potassium permanganate* until a faint pink colour is obtained; the solution complies with the *limit test for iron*.

Arsenic limit, 2 parts per million. *Lead limit*, 10 parts per million.

Loses, when dried at 120° for five hours, not less than 22·0 per cent. and not more than 27·0 per cent. of its weight.

Assay. Carry out the Assay as directed under 'Sulphanilamidum'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02772 gramme $C_9H_9O_2N_3S_2Na$.

Storage. Soluble Sulphathiazole should be kept in a well-closed container, protected from light.

Sterilisation of a Solution. A solution of Soluble Sulphathiazole for parenteral injection is prepared by the method described under 'Sulphacetamidum Solubile'. A solution which has been sterilised in this manner shows not more than a slight discoloration.

DOSES

Metric.	Imperial.
0·5 to 2 grammes.	8 to 30 grains.

TABELLÆ

Tablets

Tablets are solid discs prepared by compressing or moulding a drug, or a mixture of drugs.

General Processes

Compressed tablets are circular discs, either flat or bi-convex, prepared by compressing a drug, or mixture of drugs, with or without excipient, by means of punches in suitable dies. The material may be prepared in a dry granular form, suitable for passing through a compressing machine, by one of the following general processes.

(*a*) *Moist Granulation.* The drug, or mixture of drugs, in powder, is mixed, when necessary, with some inert substance to act as diluent, absorbent or adhesive. Lactose, Sucrose, Dextrose, Starch, Acacia in powder, dextrin and Sodium Chloride are examples of suitable substances. In certain instances the addition of an inert substance is unnecessary. The material, in the requisite degree of fineness, is intimately mixed and damped with a moistening agent. Distilled Water, Alcohol of a suitable strength, isopropyl alcohol, Mucilage of Acacia, Starch mucilage, an ethereal solution of Oil of Theobroma and aqueous solutions of Glucose, Sucrose or Gelatin, in varying dilutions or mixtures, are examples of suitable moistening agents.

The moistened material is then made into granules by pressing it through a sieve. The granules are dried, at a temperature not exceeding 60°, and again passed through a sieve. For certain tablets a disintegrating agent is required to ensure that the tablet breaks up readily in contact with an aqueous liquid. For this purpose Starch or some other suitable substance is lightly mixed with the granules.

The addition of a small proportion of a lubricant to the dried granules may be required to prevent them from sticking to the punches and dies during compression. Stearic acid, stearates and talc, in fine powder, are examples of suitable lubricants.

Diluents, disintegrating agents, moistening agents and lubricants must be innocuous and therapeutically inert.

(*b*) *Dry Granulation.* Drugs, which are produced during manufacture in granular form or in crystals of suitable size, require no special preparation. Such substances, if soluble in water, need only be passed through a suitable sieve, in order to remove the larger particles, and dried, before compression. Insoluble substances require the addition of a suitable disintegrating agent before compression, and sometimes a lubricant may be required.

(*c*) *Granulation by Preliminary Compression.* The material is first compressed into large tablets. These are broken up into granules of a suitable size, which are passed through a sieve. Before final compression the addition of a disintegrating agent and of a lubricant may be necessary.

Moulded tablets or tablet triturates, are flat circular discs prepared by pressing moistened powders into moulds. The drug, or mixture of drugs, is reduced to fine powder and diluted with the appropriate amount of Lactose or Dextrose or other suitable diluent by thorough trituration. The powder is moistened with Alcohol of a suitable strength and pressed by means of a spatula into holes in a plate of vulcanite, metal or other suitable material. The moulded tablets are ejected from the plate and dried at room temperature.

Colouring or Flavouring Agents. The addition of colouring or flavouring agents, other than those specified in the monographs, is not official.

Labelling. The label on the container states (*a*) the name of the tablets, (*b*) the quantity of the active ingredient or ingredients contained in each tablet. This requirement does not apply when the tablets are supplied in compliance with a medical prescription.

Uniformity of Weight of Tablets. The average weight is determined by weighing 20 tablets. When weighed singly not more than two of the tablets deviate from the average weight by a greater percentage than that shown in the following Table, and no tablet deviates by more than double that percentage. If twenty tablets are not available, ten may be used for the determination; not more than one then deviates from the average weight by a greater percentage than that shown in the Table, and no tablet deviates by more than double that percentage:—

TABLE

Average Weight	*Percentage Deviation*
2 grains or less	± 10 per cent.
More than 2 grains and less than 5 grains	± 7·5 per cent.
5 grains or more	± 5 per cent.

Disintegration Test. Five tablets are used for the test. Place each tablet in a test-tube, 6 inches in length and 1 inch in internal diameter, containing sufficient *water*, heated to 37°, to fill the tube almost completely, so as to leave about half-an-inch of air space when the tube

is closed. Close the tube, place it in a water-bath, maintained at 37°, and repeatedly invert it at such a speed that the tablet travels through the water without striking the ends of the tube; the time required for the tablet to dissolve, or to disintegrate completely, unless otherwise stated in the monograph, is not more than fifteen minutes. All five tablets should comply with the test. If one tablet fails to comply, the test may be repeated, using five tablets from the same sample; all must comply with the test.

Standards. The limits of the standards for the average weight of drug in tablets are framed to allow for variations due to manufacturing processes, to permitted variations in the standards of purity of Pharmacopœial drugs, and to any other permissible cause. They are based on the requirement that 20 tablets are used for the Assay. In circumstances where 20 tablets cannot be obtained, a smaller number, which must be not less than 5, may be used, but in order to allow for sampling errors, the limits of the standards are widened in accordance with the following table.

TABLE OF VARIATION OF STANDARDS

To apply when the stated limits are between 90 and 110 per cent.

Weight of drug in each tablet	*Subtract from the lower limits for samples of*			*Add to the upper limits for samples of*		
	15	10	5	15	10	5
2 grains or less	0·2	0·7	1·6	0·3	0·8	1·8
More than 2 grains and less than 5 grains	0·2	0·5	1·2	0·3	0·6	1·5
5 grains or more . . .	0·1	0·2	0·8	0·2	0·4	1·0

For limits less than 90 or greater than 110 per cent., proportionately smaller or larger allowances should be made.

Chocolate Basis. Tablets for which the Chocolate Basis is prescribed are prepared with a mixture of non-alkalised cocoa powder, of commerce, 15 parts, Sucrose, 15 parts and Lactose, 70 parts.

TABELLÆ ACIDI ACETYLSALICYLICI

[Tab. Acid. Acetylsalicyl.]

Tablets of Acetylsalicylic Acid

Synonym. Tablets of Aspirin.

NOTE.—The use of the name Aspirin as a synonym for Acetylsalicylic Acid is limited to Great Britain and Northern Ireland. In parts of the British Empire, in which the word Aspirin is a trade-mark, it may be used only when applied to the product made by the owners of the trade-mark.

Tablets of Acetylsalicylic Acid may be prepared by Dry Granulation, and compression.

The average weight of acetylsalicylic acid, $C_9H_8O_4$, in the tablets, as determined by the Assay described below, is not less than 94·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Acetylsalicylic Acid.

Tests for Identity. Boil 0·5 gramme of the powdered tablets for two or three minutes with 10 millilitres of *test-solution of sodium hydroxide*, cool, and add an excess of *dilute sulphuric acid*; a crystalline precipitate is produced, and the odour of acetic acid is perceptible. To an aqueous solution of the precipitate add *test-solution of ferric chloride*; a deep violet colour is produced.

Boil 0·1 gramme of powdered tablet with 10 millilitres of *water*, and add 1 drop of *test-solution of ferric chloride*; a violet-red colour is produced.

Melting-point, of the residue obtained in the Assay, 135° to 138°.

Test for Purity. Shake 0·1 gramme of the powdered tablets with 2 millilitres of *alcohol (90 per cent.)*, dilute with *water* to 40 millilitres, filter immediately into a Nessler tube, and wash the filter with a sufficient quantity of *water* to produce 50 millilitres. Place 2 millilitres of *alcohol (90 per cent.)* and 1·5 millilitres of a freshly prepared 0·01 per cent. w/v solution of *salicylic acid* in a second Nessler tube, dilute to 50 millilitres with *water*, and complete the test for limit of salicylic acid described under 'Acidum Acetylsalicylicum', commencing with the words 'Add to the contents of each tube'.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 1 gramme of Acetylsalicylic Acid, on a dry filter with successive quantities of warm *chloroform* until the acetylsalicylic acid is completely extracted. Remove most of the *chloroform* with the aid of gentle heat in a current of air, and allow the remainder to evaporate at laboratory temperature. Dry the residue in a desiccator to constant weight. To about 0·5 gramme of the residue, accurately weighed, add 30 millilitres of *N/2 sodium hydroxide*, and complete the Assay as directed under 'Acidum Acetylsalicylicum' commencing with the words "and boil gently for ten minutes". Calculate the average weight of acetylsalicylic acid, $C_9H_8O_4$, in the tablets.

DOSES. Acetylsalicylic Acid, 0·3 to 1 gramme; 5 to 15 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ ACIDI ASCORBICI

[Tab. Acid. Ascorb.]

Tablets of Ascorbic Acid

Synonym. Tablets of Vitamin C.

Tablets of Ascorbic Acid may be prepared by Moist Granulation, drying at a temperature not exceeding 30°, and compression.

The average weight of ascorbic acid, $C_6H_8O_6$, in the tablets, as determined by the Assay described below, is not less than 88 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Ascorbic Acid.

Tests for Identity. Shake a quantity of the powdered tablets with *water* and filter. The filtrate is acid to *solution of litmus*; liberates carbon dioxide from *solution of sodium bicarbonate*; decolourises *solution of 2:6-dichloro-*

phenolindophenol; and immediately reduces *solution of silver nitrate*, producing a black precipitate.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·05 gramme of Ascorbic Acid, in 25 millilitres of *solution of metaphosphoric acid*, and dilute to 250 millilitres with *water*. Titrate 5 millilitres rapidly with *standard solution of 2 : 6-dichlorophenolindophenol* until the pink colour of the dye persists for ten seconds, the titration occupying not more than two minutes. Each millilitre of *standard solution of 2 : 6-dichlorophenolindophenol* is equivalent to 0·0001 gramme of ascorbic acid, $C_6H_8O_6$. Calculate the average weight of ascorbic acid, $C_6H_8O_6$, in the tablets.

Storage. Tablets of Ascorbic Acid should be kept in a well-closed bottle, protected from light.

DOSES. Ascorbic Acid, Prophylactic (daily), 0·025 to 0·05 gramme; $^2/_5$ to $^4/_5$ grain (500 to 1000 Units). Therapeutic (daily), 0·1 to 0·25 gramme; $1^1/_2$ to 4 grains (2000 to 5000 Units).

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·05 gramme shall be dispensed or supplied.

TABELLÆ ACIDI NICOTINICI

[Tab. Acid. Nicotin.]

Tablets of Nicotinic Acid

Tablets of Nicotinic Acid may be prepared by Moist Granulation, and compression.

The average weight of nicotinic acid, $C_6H_5O_2N$, in the tablets, as determined by the Assay described below, is not less than 88·5 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Nicotinic Acid.

Tests for Identity. Boil, for a few minutes, a quantity of the powdered tablets, equivalent to about 0·1 gramme of Nicotinic Acid, with 5 millilitres of *alcohol* (*95 per cent.*), filter and wash the residue with 2 millilitres of hot *alcohol* (*95 per cent.*). Add 6 millilitres of *water* to the filtrate, and evaporate on a water-bath to about 5 millilitres. Cool, filter if necessary, and evaporate to about 2 millilitres. Cool and allow to stand at 0° for one hour. Filter, wash the residue with a little cold *alcohol* (*95 per cent.*) and dry at 100°; the residue complies with the Tests for Identity described under 'Acidum Nicotinicum'.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Nicotinic Acid, on a dry filter with successive small quantities of hot *alcohol* (*95 per cent.*), previously neutralised to *solution of phenolphthalein*, until the nicotinic acid is completely extracted. Add 50 millilitres of *water* to the filtrate and evaporate to about 50 millilitres. Cool, titrate with *N/10 sodium hydroxide*, using *solution of phenolphthalein* as indicator. Each millilitre of *N/10 sodium hydroxide* is equivalent to 0·01231 gramme of $C_6H_5O_2N$. Calculate the average weight of nicotinic acid, $C_6H_5O_2N$, in the tablets.

DOSES. Nicotinic Acid, 0·05 to 0·1 gramme; $^3/_4$ to $1^1/_2$ grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·05 gramme shall be dispensed or supplied.

TABELLÆ ATROPINÆ SULPHATIS

[Tab. Atrop. Sulph.]

Tablets of Atropine Sulphate

Tablets of Atropine Sulphate may be prepared by Moist Granulation, and compression.

The average weight of atropine sulphate, $(C_{17}H_{23}O_3N)_2,H_2SO_4,H_2O$, in the tablets, as determined by the Assay described below, is not less than 89·5 per cent., and not more than 112·5 per cent., of the prescribed, or stated, amount of Atropine Sulphate.

Tests for Identity. Triturate a quantity of the powdered tablets with 1 drop of *strong solution of ammonia*, add 2 millilitres of *chloroform* and triturate thoroughly; decant the chloroform solution and remove the chloroform. To the residue add 4 drops of *nitric acid*, and evaporate to dryness on a water-bath; the residue is faintly yellow in colour, and, after cooling, assumes a violet colour on moistening with freshly prepared *alcoholic solution of potassium hydroxide*.

The powdered tablets yield the *reactions* characteristic of sulphates.

Assay. Weigh and powder 20 tablets. Transfer an accurately weighed quantity of the powder, equivalent to about 0·01 gramme of Atropine Sulphate, to a 100-millilitre flask. Add 40 millilitres of *water* and 5 millilitres of *dilute sulphuric acid*, shake occasionally during two hours, filter into a separator, wash the filter with *water*, make the filtrate and washings alkaline with *dilute solution of ammonia*, and shake without delay with successive quantities of *chloroform*, until *complete extraction* of the alkaloid is effected, carrying out the extraction as rapidly as possible. Wash the combined chloroform solutions with about 3 millilitres of *water*. Remove the chloroform, dissolve the residue in 5 millilitres of *N/50 sulphuric acid*, and titrate with *N/50 sodium hydroxide*, using *solution of methyl red*, or *tincture of cochineal*, as indicator. Each millilitre of *N/50 sulphuric acid* is equivalent to 0·000945 gramme of $(C_{17}H_{23}O_3N)_2,H_2SO_4,H_2O$. Calculate the average weight of atropine sulphate, $(C_{17}H_{23}O_3N)_2,H_2SO_4,H_2O$ in the tablets.

DOSES. Atropine Sulphate, 0·00025 to 0·001 gramme; $^1/_{240}$ to $^1/_{60}$ grain.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, $^1/_{100}$ grain shall be dispensed or supplied.

TABELLÆ BARBITONI

[Tab. Barbiton.]

Tablets of Barbitone

Synonym. Barbital Tablets.

Tablets of Barbitone may be prepared by Moist Granulation, and compression.

The average weight of barbitone, $C_8H_{12}O_3N_2$, in the tablets, as determined by the Assay described below, is not less than 95 per cent.,

and not more than 105 per cent., of the prescribed, or stated, amount of Barbitone.

Tests for Identity. The residue obtained in the Assay complies with the following tests :—

Melting-point, 189° to 192°.

To 25 millilitres of a saturated solution in *water*, acidified with *nitric acid*, add a few drops of *solution of mercuric nitrate* ; a gelatinous precipitate is produced.

When fused with a caustic alkali, or when boiled with a strong solution of caustic alkali, evolves ammonia.

Disintegration Test. Maximum time, thirty minutes.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Barbitone, as completely as possible in 10 millilitres of a 2 per cent. w/v solution of *sodium hydroxide* in *water* contained in a separator, and saturate the liquid with *sodium chloride*. Shake the solution with two successive quantities, each of 15 millilitres, of *ether*, shaking each separated ethereal liquid with the same 3 millilitres of *water* in a second separator, and reject the ethereal liquids. Add the washing to the alkaline liquid, acidify with *hydrochloric acid*, and completely extract the barbitone with successive quantities, each of 15 millilitres, of *ether*. Mix the ethereal solutions, and wash with two successive quantities, each of 2 millilitres, of *water*. Mix the aqueous washings and shake with 10 millilitres of *ether*. Mix the ethereal solutions, filter, wash the filter with *ether*, evaporate the solvent, dry the residue of $C_8H_{12}O_3N_2$ to constant weight at 100°. Calculate the average weight of barbitone, $C_8H_{12}O_3N_2$, in the tablets.

DOSES. Barbitone, 0·3 to 0·6 gramme ; 5 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ BARBITONI SOLUBILIS

[Tab. Barbiton. Solub.]

Tablets of Soluble Barbitone

Synonym. Barbital Sodium Tablets.

Tablets of Soluble Barbitone may be prepared by Moist Granulation, and compression.

The average weight of soluble barbitone, $C_8H_{11}O_3N_2Na$, in the tablets as determined by the Assay described below, is not less than 92 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Soluble Barbitone.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Soluble Barbitone, with 10 millilitres of *water*, filter ; the filtrate is alkaline to *solution of litmus* ; and yields a crystalline precipitate of barbitone on the addition of *dilute hydrochloric acid*.

Melting-point, of the residue obtained in the Assay, 189° to 192°.

The powdered tablet yields the *reactions* characteristic of sodium.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Soluble Barbitone, as completely as possible in 10 millilitres of a 2 per cent. w/v solution of *sodium hydroxide* in *water* contained in a separator and complete the Assay as directed under 'Tabellæ Barbitoni' commencing with the words "and saturate the liquid with *sodium chloride* . . ." Each gramme of the residue is equivalent to 1·119 grammes of $C_8H_{11}O_3N_2Na$. Calculate the average weight of soluble barbitone, $C_8H_{11}O_3N_2Na$, in the tablets.

Storage. Tablets of Soluble Barbitone should be kept in a well-closed container.

DOSES. Soluble Barbitone, 0·3 to 0·6 gramme; 5 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ CALCII LACTATIS

[Tab. Calc. Lact.]

Tablets of Calcium Lactate

Tablets of Calcium Lactate may be prepared by Moist Granulation, and compression.

The average weight of calcium lactate, $C_6H_{10}O_6Ca,5H_2O$, in the tablets, as determined by the Assay described below, is not less than 92 per cent., and not more than 108 per cent., of the prescribed, or stated, amount of Calcium Lactate.

Tests for Identity. An aqueous extract of the powdered tablet, acidified with *sulphuric acid* and warmed with *potassium permanganate*, develops the odour of acetaldehyde.

The powdered tablet yields the *reactions* characteristic of calcium.

Assay. Weigh and powder 20 tablets. Ignite an accurately weighed quantity of the powder equivalent to about 1·5 grammes of Calcium Lactate; cool and dissolve the residue in *dilute hydrochloric acid*. Transfer the mixture to a 200-millilitre flask, dilute to 200 millilitres with *water*, and mix. Filter, reject the first 20 millilitres of the filtrate, transfer 50 millilitres to a beaker, and add 100 millilitres of *water*; add 1 gramme of *ammonium oxalate* and 1 gramme of *ammonium chloride*, neutralise with *dilute solution of ammonia*, and add 5 millilitres in excess; boil for several minutes, and set aside in a warm place for one hour. Collect the precipitate and wash it with *water* until the washings show no turbidity with *solution of calcium chloride*; suspend it in 100 millilitres of *water*, add 5 millilitres of *sulphuric acid*, heat to about 70° and titrate with *N/10 potassium permanganate*. Each millilitre of *N/10 potassium permanganate* is equivalent to 0·01541 gramme of $C_6H_{10}O_6Ca,5H_2O$. Calculate the average weight of calcium lactate, $C_6H_{10}O_6Ca,5H_2O$, in the tablets.

DOSES. Calcium Lactate, 1 to 4 grammes; 15 to 60 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ CARBROMALI

[Tab. Carbrom.]

Tablets of Carbromal

Synonym. Tablets of Uradal.

Tablets of Carbromal may be prepared by Moist Granulation, and compression.

The average weight of carbromal, $C_7H_{13}O_3N_2Br$, in the tablets, as determined by the Assay described below, is not less than 95 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Carbromal.

Tests for Identity. Heat 0·2 gramme of the powdered tablets with about 5 millilitres of *N/1 sodium hydroxide*; ammonia is evolved, and the resulting solution yields the *reactions* characteristic of bromides.

Melting-point, of the residue obtained in the Assay, 116° to 118°.

Disintegration Test. Maximum time, thirty minutes.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 0·8 gramme of Carbromal, on a dry filter with successive quantities of *acetone* until the carbromal is completely extracted. Evaporate the solvent in a tared dish, dry the residue of $C_7H_{13}O_3N_2Br$ to constant weight at 100°. Calculate the average weight of carbromal, $C_7H_{13}O_3N_2Br$, in the tablets.

DOSES. Carbromal, 0·3 to 1 gramme; 5 to 15 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ CODEINÆ PHOSPHATIS

[Tab. Codein. Phosph.]

Tablets of Codeine Phosphate

Tablets of Codeine Phosphate may be prepared by Moist Granulation, and compression.

The average weight of codeine phosphate, $C_{18}H_{21}O_3N$, H_3PO_4, H_2O, in the tablets, as determined by the Assay described below, is not less than 87·5 per cent., and not more than 110·5 per cent., of the prescribed, or stated, amount of Codeine Phosphate.

Tests for Identity. Macerate a quantity of the powdered tablets, equivalent to about 0·05 gramme of Codeine Phosphate, with 5 millilitres of *dilute sulphuric acid* and 15 millilitres of *water*. Filter, make alkaline with *dilute solution of ammonia*, and extract with successive quantities of *chloroform*; evaporate the chloroform on a water-bath. The residue complies with the Tests for Identity described under 'Codeina'.

The powdered tablets yield the *reactions* characteristic of phosphates.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Codeine Phosphate, as completely as possible in 20 millilitres of *N/2 sulphuric acid*,

filter into a separator, and wash the residue on the filter with *N/2 sulphuric acid*, until *complete extraction* of the alkaloid is effected. Make alkaline with *dilute solution of ammonia*, and extract with successive quantities of *chloroform* until *complete extraction* of the codeine is effected. Evaporate the chloroform solution almost to dryness on a water-bath, add 10 millilitres of *N/10 sulphuric acid* and heat gently until the codeine is dissolved and the chloroform expelled. Cool, and titrate with *N/10 sodium hydroxide*, using *solution of methyl red* or *tincture of cochineal* as indicator. Each millilitre of *N/10 sulphuric acid* is equivalent to 0·04152 gramme of $C_{18}H_{21}O_3N$, $H_3PO_4.H_2O$. Calculate the average weight of codeine phosphate, $C_{18}H_{21}O_3N$, $H_3PO_4.H_2O$, in the tablets.

DOSES. Codeine Phosphate, 0·016 to 0·06 gramme; 1/4 to 1 grain.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1/2 grain shall be dispensed or supplied.

TABELLÆ EPHEDRINÆ HYDROCHLORIDI

[Tab. Ephed. Hydrochlor.]

Tablets of Ephedrine Hydrochloride

Tablets of Ephedrine Hydrochloride may be prepared by Moist Granulation, and compression.

The average weight of ephedrine hydrochloride, $C_{10}H_{15}ON,HCl$, in the tablets, as determined by the Assay described below, is not less than 89·5 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Ephedrine Hydrochloride.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·4 gramme of Ephedrine Hydrochloride, with two successive quantities, each of 10 millilitres, of *chloroform*; reject the chloroform. Macerate the residue with 30 millilitres of warm *alcohol (90 per cent.)* for twenty minutes, filter, evaporate the filtrate to dryness on a water-bath, and dry the residue at 80°; the residue complies with the following tests:—

Melting-point, 217° to 220°.

Dissolve 0·01 gramme in 1 millilitre of *water*, and add 0·1 millilitre of *solution of copper sulphate*, followed by 1 millilitre of *test-solution of sodium hydroxide*; the liquid becomes violet in colour; add 1 millilitre of *ether*, and shake; the ethereal layer is purple, and the aqueous layer is blue.

Dissolve 0·2 gramme in 5 millilitres of *water*, add 1 millilitre of *test-solution of sodium hydroxide*; shake with four successive quantities, each of 15 millilitres, of *ether*, and wash the mixed ethereal solutions with 5 millilitres of *water*; allow the ether to evaporate just to dryness on a warm water-bath. Dissolve the residue in 30 millilitres of *chloroform*, cover the dish, and set aside for twelve hours; crystals separate from the liquid, and, after drying, yield the *reactions* characteristic of chlorides. The powdered tablets yield the *reactions* characteristic of chlorides.

Assay. Weigh and powder 20 tablets. Place an accurately weighed quantity of the powder, equivalent to about 0·1 gramme of Ephedrine Hydrochloride, in a separator with 10 millilitres of *water* and add 0·1 gramme of *anhydrous sodium carbonate* dissolved in 5 millilitres of *water*. Add sufficient *sodium chloride* to saturate the liquid and shake with successive quantities of

anæsthetic ether until *complete extraction* is effected. Mix the ethereal liquids, allow to stand until clear, and pour off through a dry filter into a wide-necked flask provided with a stopper, finally washing the filter with small quantities of *anæsthetic ether*. Remove most of the ether in a current of air at a temperature not exceeding 30°. Cool the remaining liquid and add 10 millilitres of *N/10 hydrochloric acid* and 10 millilitres of *water*. Stopper the flask and shake well. Add 10 millilitres of *chloroform* and again shake well. Rinse the stopper with a little *chloroform* and *water* into the flask, add a few pieces of glass capillary tubing, and cautiously remove the solvent by evaporation. Cool, and titrate the excess of acid with *N/50 sodium hydroxide*, using *tincture of cochineal* or *solution of bromothymol blue* as indicator. Each millilitre of *N/10 hydrochloric acid* is equivalent to 0·02016 gramme of $C_{10}H_{15}ON,HCl$. Calculate the average weight of ephedrine hydrochloride, $C_{10}H_{15}ON,HCl$, in the tablets.

DOSES. Ephedrine Hydrochloride, 0·016 to 0·1 gramme; 1/4 to 1 1/2 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1/2 grain shall be dispensed or supplied.

TABELLÆ ERYTHRITYLIS TETRANITRATIS

[Tab. Erythrityl. Tetranit.]

Tablets of Erythrityl Tetranitrate

Synonym. Tablets of Erythrol Tetranitrate.

Tablets of Erythrityl Tetranitrate may be prepared from Diluted Erythrityl Tetranitrate, with or without additional Lactose, by Moist Granulation, using as moistening agents an ethereal solution of stearic acid and Alcohol (45 per cent.), drying without the use of heat, and compression.

The average weight of erythrityl tetranitrate, $C_4H_6O_{12}N_4$, in the tablets, as determined by the Assay described below, is not less than 85·5 per cent., and not more than 115·5 per cent., of the prescribed, or stated, amount of erythrityl tetranitrate.

Disintegration Test. The Disintegration Test does not apply to Tablets of Erythrityl Tetranitrate.

Assay. Weigh and powder 20 tablets. Mix an accurately weighed quantity of the powder, equivalent to about 0·06 gramme of erythrityl tetranitrate, with 20 millilitres of *glacial acetic acid*, shake continuously for one hour, and filter. Mix 1 millilitre of the filtrate with 2 millilitres of *phenoldisulphonic acid*, stir well, and allow to stand for fifteen minutes. Add 40 millilitres of *water*, make alkaline with *strong solution of ammonia*, cool to about 20°, dilute to 100 millilitres with *water*, and filter, if necessary. Compare, under similar conditions in a suitable colorimeter, the colour of this solution with the colours of solutions containing known quantities of erythrityl tetranitrate, prepared from Diluted Erythrityl Tetranitrate, which have been treated in an exactly similar manner. Calculate the average weight of erythrityl tetranitrate, $C_4H_6O_{12}N_4$, in the tablets.

Storage. Tablets of Erythrityl Tetranitrate should be protected from light and stored in a cool place.

DOSES. Diluted Erythrityl Tetranitrate, 0·03 to 0·12 gramme, representing 0·015 to 0·06 gramme of pure erythrityl tetranitrate; 1/2 to 2 grains, representing 1/4 to 1 grain of pure erythrityl tetranitrate.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1/2 grain of Diluted Erythrityl Tetranitrate, representing 1/4 grain of pure erythrityl tetranitrate, shall be dispensed or supplied.

Tablets of Erythrityl Tetranitrate should be masticated before swallowing.

TABELLÆ GLYCERYLIS TRINITRATIS

[Tab. Glyc. Trinit.]

Tablets of Glyceryl Trinitrate

Synonyms. Tabellæ Trinitrini: Trinitrin Tablets: Nitroglycerin Tablets.

Tablets of Glyceryl Trinitrate may be prepared by adding to granules of Chocolate Basis prepared by Moist Granulation a solution of glyceryl trinitrate in Alcohol (90 per cent.) containing a known amount of $C_3H_5O_9N_3$, mixing intimately, drying without the use of heat, and compression.

The average weight of glyceryl trinitrate, $C_3H_5O_9N_3$, in the tablets, as determined by the Assay described below, is not less than 81 per cent., and not more than 121 per cent., of the prescribed, or stated, amount of glyceryl trinitrate.

Disintegration Test. The Disintegration Test does not apply to Tablets of Glyceryl Trinitrate.

Assay. Weigh and powder 20 tablets. Mix an accurately weighed quantity of the powder, equivalent to about 0·001 gramme of glyceryl trinitrate, with 5 millilitres of *glacial acetic acid*, shake continuously for one hour, and filter. Mix 1 millilitre of the filtrate with 2 millilitres of *phenoldisulphonic acid*, stir well, and allow to stand for fifteen minutes. Add about 8 millilitres of *water*, make alkaline with *strong solution of ammonia*, cool to about 20°, dilute to 20 millilitres with *water*, and filter if necessary. Compare, under similar conditions in a suitable colorimeter, the colour of this solution with the colours of solutions containing known quantities of glyceryl trinitrate, which have been treated in an exactly similar manner. Calculate the average weight of glyceryl trinitrate, $C_3H_5O_9N_3$, in the tablets.

Storage. Tablets of Glyceryl Trinitrate should be kept in a well-closed container, protected from light, and stored in a cool place.

DOSES. Glyceryl Trinitrate, 0·0005 to 0·001 gramme; 1/130 to 1/65 grain.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1/130 grain shall be dispensed or supplied.

Tablets of Glyceryl Trinitrate should be masticated before swallowing.

TABELLÆ HEXAMINÆ

[Tab. Hexamin.]

Tablets of Hexamine

Synonym. Methenamine Tablets.

Tablets of Hexamine may be prepared by Dry Granulation, and compression.

The average weight of hexamine, $C_6H_{12}N_4$, in the tablets, as determined by the Assay described below, is not less than 94 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Hexamine.

Test for Identity. When heated with *dilute sulphuric acid*, the powdered tablets give off formaldehyde; and, when the solution is subsequently rendered alkaline with *test-solution of sodium hydroxide*, it gives off ammonia.

Disintegration Test. The Disintegration Test does not apply to Tablets of Hexamine.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 1·5 grammes of Hexamine, in 10 millilitres of *water*, and complete the Assay as directed under 'Hexamina', commencing with the words "add 50 millilitres of *N/1 sulphuric acid*, . . ." Calculate the average weight of hexamine, $C_6H_{12}N_4$, in the tablets.

DOSES. Hexamine, 0·6 to 2 grammes; 10 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

Tablets of Hexamine should be dissolved in water before administration.

TABELLÆ HYDRARGYRI CUM CRETA

[Tab. Hydrarg. c. Cret.]

Tablets of Mercury with Chalk

Synonym. Tablets of Grey Powder.

Tablets of Mercury with Chalk may be prepared by Moist Granulation, and compression.

The average weight of mercury, Hg, in the tablets, as determined by the Assay described below, is not less than 28 per cent., and not more than 38·5 per cent., of the prescribed, or stated, amount of Mercury with Chalk.

Test for Identity. Add a quantity of the powdered tablets, equivalent to about 0·1 gramme of Mercury with Chalk, to 20 millilitres of warm *acetic acid*; effervescence occurs, and a residue of finely divided mercury remains.

Disintegration Test. The Disintegration Test does not apply to Tablets of Mercury with Chalk.

Assay. Weigh and powder 20 tablets. Place an accurately weighedb uantity of the powder, equivalent to about 0·5 gramme of Mercury with Chalk, in

a 200-millilitre conical flask, add 5 millilitres of *nitric acid* mixed with 10 millilitres of *water* and boil gently for five minutes or until all the mercury is dissolved. Add 50 millilitres of *water* and sufficient *N/10 potassium permanganate* to produce a permanent pink colour. Decolourise by the addition of a trace of *ferrous sulphate* and titrate with *N/10 ammonium thiocyanate*, using *solution of ferric ammonium sulphate* as indicator. Each millilitre of *N/10 ammonium thiocyanate* is equivalent to 0·01003 gramme of Hg. Calculate the average weight of mercury, Hg, in the tablets.

Storage. Tablets of Mercury with Chalk should be kept in a well-closed bottle, and stored in a cool place.

DOSES. Mercury with Chalk, 0·06 to 0·3 gramme; 1 to 5 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1 grain shall be dispensed or supplied.

Tablets of Mercury with Chalk should be crushed before administration.

TABELLÆ HYDRARGYRI SUBCHLORIDI

[Tab. Hydrarg. Subchlor.]

Tablets of Mercurous Chloride

Synonyms. Tablets of Calomel; Tablets of Subchloride of Mercury.

Tablets of Mercurous Chloride may be prepared by Moist Granulation, and compression.

The average weight of mercurous chloride, HgCl, in the tablets, as determined by the Assay described below, is not less than 89·5 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Mercurous Chloride.

Tests for Identity. Mix a quantity of the powdered tablet with *dilute solution of ammonia*; a black colour is produced.

Mix a quantity of the powdered tablet with an equal weight of *anhydrous sodium carbonate* and heat in a hard glass tube; fine globules of mercury are deposited on the cool part of the tube.

Assay. Weigh and powder 20 tablets. To an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Mercurous Chloride, add 10 millilitres of *water* and stir for five minutes. Filter through a moistened filter, or tightly packed asbestos mat, and wash well with *water*, followed by a few millilitres of *alcohol*, and then with *ether*, avoiding any loss of mercurous chloride by creeping. Transfer the filter and insoluble powder to a glass-stoppered flask, add 30 millilitres of *N/10 iodine* and 3 grammes of *potassium iodide* dissolved in 6 millilitres of *water*. Close the flask and allow to stand, with frequent vigorous shaking, for about one hour or until solution of the mercurous chloride is complete. Titrate the excess of iodine with *N/10 sodium thiosulphate*, using *mucilage of starch* as indicator. Each millilitre of *N/10 iodine* is equivalent to 0·02361 gramme of HgCl. Calculate the average weight of mercurous chloride, HgCl, in the tablets.

DOSES. Mercurous Chloride, 0·03 to 0·2 gramme; $\frac{1}{2}$ to 3 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 1 grain shall be dispensed or supplied.

TABELLÆ MEPACRINÆ HYDROCHLORIDI

[Tab. Mepacr. Hydrochlor.]

Tablets of Mepacrine Hydrochloride

Tablets of Mepacrine Hydrochloride may be prepared by Moist Granulation, and compression.

The average weight of mepacrine hydrochloride, $C_{23}H_{30}ON_3Cl.2HCl,2H_2O$, in the tablets, as determined by the Assay described below, is not less than 88 per cent., and not more than 111 per cent., of the prescribed, or stated, amount of Mepacrine Hydrochloride.

Tests for Identity. Extract a quantity of the powdered tablets, equivalent to about 0·25 gramme of Mepacrine Hydrochloride, with two successive quantities, each of 15 millilitres, of *water*, and filter.

To 5 millilitres of the filtrate add a slight excess of *dilute solution of ammonia*, extract with two successive quantities, each of 10 millilitres, of *ether*; the aqueous layer gives the *reactions* characteristic of chlorides.

To the remainder of the filtrate add 2 millilitres of *dilute solution of ammonia*, extract with successive quantities, each of 10 millilitres, of *chloroform*. Evaporate the chloroform, add 3 millilitres of hot *water* and 2 millilitres of *dilute hydrochloric acid*, and stir thoroughly; allow to stand for thirty minutes, filter, wash the crystals with ice-cold *water*, until the washings are almost neutral to *litmus paper*, and dry at about 100°. Dissolve the residue in 8 millilitres of *water* and use the solution for the following tests:—

To 2·5 millilitres add *dilute solution of ammonia* in slight excess; a yellow to orange-coloured pasty precipitate is formed which adheres to the side of the tube and is readily soluble in *ether*.

To 2·5 millilitres add 0·5 millilitre of *dilute nitric acid*; a yellow crystalline precipitate is formed.

To 2·5 millilitres add 0·5 millilitre of *test-solution of mercuric chloride*; a yellow precipitate is formed.

Assay. Weigh and powder 20 tablets. Suspend an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Mepacrine Hydrochloride, in 25 millilitres of *water*, add 3 millilitres of *dilute hydrochloric acid* and extract with two successive quantities, each of 15 millilitres, of *chloroform*. Wash the chloroform with 10 millilitres of *water* containing a little *hydrochloric acid* and reject the chloroform. Mix the aqueous liquids, add 10 millilitres of *dilute solution of ammonia* and complete the Assay as directed under 'Mepacrinæ Hydrochloridum', commencing with the words 'and extract the base by shaking . . .' Each gramme of the residue is equivalent to 1·2726 grammes of $C_{23}H_{30}ON_3Cl,2HCl,2H_2O$. Calculate the average weight of mepacrine hydrochloride, $C_{23}H_{30}ON_3Cl,2HCl,2H_2O$, in the tablets.

DOSES. Mepacrine Hydrochloride, 0·05 to 0·1 gramme; 3/4 to 1 1/2 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·1 gramme shall be dispensed or supplied.

TABELLÆ NICOTINAMIDI

[Tab. Nicotinamid.]

Tablets of Nicotinamide

Synonym. Tablets of Nicotinic Acid Amide.

Tablets of Nicotinamide may be prepared by Moist Granulation, and compression.

The average weight of nicotinamide, $C_6H_6ON_2$, in the tablets, as determined by the Assay described below, is not less than 88 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Nicotinamide.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Nicotinamide, with two successive quantities, each of 10 millilitres, of *alcohol (95 per cent.)*; filter. Evaporate the filtrate to dryness on a water-bath and dry the residue at about 80°. *Melting-point*, of the residue, 128° to 131°. The residue complies with the Tests for Identity described under 'Nicotinamidum'.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Nicotinamide, on a dry filter with successive small quantities of *alcohol (95 per cent.)*, until the nicotinamide is completely extracted. Evaporate the solution on a water-bath to about 10 millilitres. Transfer to an ammonia distillation apparatus, add 200 millilitres of *water* and 75 millilitres of *test-solution of sodium hydroxide*. Boil gently for twenty minutes and complete the Assay as directed under 'Nicotinamidum', commencing with the words 'collecting any distillate . . .' Calculate the average weight of nicotinamide, $C_6H_6ON_2$, in the tablets.

DOSES. Nicotinamide, 0·02 to 0·1 gramme; 1/3 to 1 1/2 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·05 gramme shall be dispensed or supplied.

TABELLÆ PHENACETINI

[Tab. Phenacetin.]

Tablets of Phenacetin

Synonym. Acetophenetidin Tablets.

Tablets of Phenacetin may be prepared by Moist Granulation, and compression.

The average weight of phenacetin, $C_{10}H_{13}O_2N$, in the tablets, as determined by the Assay described below, is not less than 95 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Phenacetin.

Tests for Identity. Boil 0·1 gramme of the powdered tablets with 1 millilitre of *hydrochloric acid* for three minutes, dilute with 10 millilitres of *water*, cool, and filter; to the filtrate add one drop of *N/10 potassium dichromate*; a violet colour, changing rapidly to ruby red, is produced.

Melting-point, of the residue obtained in the Assay, 134° to 136°.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 0·8 gramme of Phenacetin, on a dry filter with successive small quantities of hot *alcohol (95 per cent.)*, until the phenacetin is completely extracted. Evaporate the solvent in a tared flask and dry for one hour at 100°. Stir the residue thoroughly for a few minutes with 5 millilitres of *water*, previously saturated with *phenacetin*, and decant from the residue through a filter, about 6 centimetres in diameter. Repeat the extraction with a further 5 millilitres of the phenacetin-saturated water, decanting through the same filter, and finally washing the filter with two successive quantities, each of 5 millilitres, of the phenacetin-saturated water. Dissolve the residue on the filter in hot *alcohol (95 per cent.)*, collecting the solution in the tared flask. Evaporate the solvent, and dry the residue of $C_{10}H_{13}O_2N$ to constant weight at 100°. Calculate the average weight of phenacetin, $C_{10}H_{13}O_2N$, in the tablets.

DOSES. Phenacetin, 0·3 to 0·6 gramme; 5 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ PHENAZONI

[Tab. Phenazon.]

Tablets of Phenazone

Synonym. Tablets of Antipyrin.

Tablets of Phenazone may be prepared by Moist Granulation, and compression.

The average weight of phenazone, $C_{11}H_{12}ON_2$, in the tablets, as determined by the Assay described below, is not less than 95 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Phenazone.

Tests for Identity. Shake a quantity of the powdered tablets, equivalent to about 0·12 gramme of Phenazone, with 12 millilitres of *water*; filter; add the filtrate to 0·1 gramme of *sodium nitrite*, and add 1 millilitre of *dilute sulphuric acid*; a green colour is produced.

Shake a quantity of the powdered tablets, equivalent to about 0·002 gramme of Phenazone, with 2 millilitres of *water*; filter; to the filtrate add 1 drop of *test-solution of ferric chloride*; a deep red colour is produced, which, on the addition of 10 drops of *sulphuric acid*, changes to light yellow.

Melting-point, of the residue obtained in the Assay, 111° to 113°.

Assay. Weigh and powder 20 tablets. Treat an accurately weighed quantity of the powder, equivalent to about 1 gramme of Phenazone, on a dry filter with successive small quantities of warm *chloroform* until the phenazone is completely extracted. Evaporate the chloroform, and dry the residue of $C_{11}H_{12}ON_2$ to constant weight at 100°. Calculate the average weight of phenazone, $C_{11}H_{12}ON_2$, in the tablets.

DOSES. Phenazone, 0·3 to 0·6 gramme; 5 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ PHENOBARBITONI

[Tab. Phenobarbiton.]

Tablets of Phenobarbitone

Synonym. Phenobarbital Tablets.

Tablets of Phenobarbitone may be prepared by Moist Granulation, and compression.

The average weight of phenobarbitone, $C_{12}H_{12}O_3N_2$, in the tablets, as determined by the Assay described below, is not less than 90 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Phenobarbitone.

Tests for Identity. The residue obtained in the Assay complies with the following tests:—

Melting-point, 173° to 177°.

When fused with a caustic alkali, or when boiled with a strong solution of caustic alkali, gives off ammonia.

Disintegration Test. Maximum time, thirty minutes.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Phenobarbitone, as completely as possible in 10 millilitres of a 2 per cent. w/v solution of *sodium hydroxide* in *water* contained in a separator, and saturate the liquid with *sodium chloride*. Shake the solution with two successive quantities, each of 15 millilitres, of *ether*, shaking each separated ethereal liquid with the same 3 millilitres of *water* in a second separator, and reject the ethereal liquids. Add the washing to the alkaline liquid, acidify with *hydrochloric acid*, and completely extract the phenobarbitone with successive quantities, each of 15 millilitres, of *ether*. Mix the ethereal solutions, and wash with two successive quantities, each of 2 millilitres, of *water*. Mix the aqueous washings, and shake with 10 millilitres of *ether*. Mix the ethereal solutions, filter and wash the filter with *ether*; evaporate the solvent, and dry the residue of $C_{12}H_{12}O_3N_2$ to constant weight at 100°. Calculate the average weight of phenobarbitone, $C_{12}H_{12}O_3N_2$, in the tablets.

DOSES. Phenobarbitone, 0·03 to 0·12 gramme; $\frac{1}{2}$ to 2 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, $\frac{1}{2}$ grain shall be dispensed or supplied.

TABELLÆ PHENOBARBITONI SOLUBILIS

[Tab. Phenobarbiton. Solub.]

Tablets of Soluble Phenobarbitone

Synonym. Phenobarbital Sodium Tablets.

Tablets of Soluble Phenobarbitone may be prepared by Moist Granulation, and compression.

The average weight of soluble phenobarbitone, $C_{12}H_{11}O_3N_2Na$, in the tablets, as determined by the Assay described below, is not less

than 85·5 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Soluble Phenobarbitone.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Soluble Phenobarbitone, with 10 millilitres of *water*, and filter; the filtrate is alkaline to *solution of litmus*, and yields a crystalline precipitate of phenobarbitone on the addition of *dilute hydrochloric acid*.

Melting-point, of the residue obtained in the Assay, 173° to 177°.

The powdered tablets yield the *reactions* characteristic of sodium.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Tabellæ Barbitoni Solubilis', using an accurately weighed quantity of powder, equivalent to about 0·3 gramme of Soluble Phenobarbitone. Each gramme of the residue is equivalent to 1·0948 grammes of $C_{12}H_{11}O_3N_2Na$. Calculate the average weight of soluble phenobarbitone, $C_{12}H_{11}O_3N_2Na$, in the tablets.

Storage. Tablets of Soluble Phenobarbitone should be kept in a well-closed container.

DOSES. Soluble Phenobarbitone, 0·03 to 0·12 gramme; ½ to 2 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, ½ grain shall be dispensed or supplied.

TABELLÆ PHENOLPHTHALEINI

[Tab. Phenolphthal.]

Tablets of Phenolphthalein

Tablets of Phenolphthalein may be prepared, with Chocolate Basis, by Moist Granulation, and compression.

The average weight of phenolphthalein, $C_{20}H_{14}O_4$, in the tablets, as determined by the Assay described below, is not less than 90 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Phenolphthalein.

Test for Identity. When the powdered tablets are treated with dilute solutions of alkali hydroxides or hot solutions of alkali carbonates, a red solution is formed, which, on the addition of a dilute acid, is decolourised.

Disintegration Test. The Disintegration Test does not apply to Tablets of Phenolphthalein.

Assay. Weigh and powder 20 tablets. Shake an accurately weighed quantity of the powder, equivalent to about 1·3 grammes of Phenolphthalein, with 50 millilitres of *light petroleum* (*boiling-point 50° to 60°*), for one hour, and filter. Remove the light petroleum from 25 millilitres of the filtrate, dry the residue at 100°, and weigh. Calculate the weight of residue which would be obtained from 1 gramme of the powdered tablets. Shake an accurately weighed quantity of the powder, equivalent to about 0·26 gramme of Phenolphthalein, with 50 millilitres of *ether* for three hours, and filter. Remove the ether from 25 millilitres of the filtrate, dry the residue at 100°, and weigh. Calculate the weight of residue which would be obtained from 1 gramme of the powdered tablets. The difference between the weights of

the two residues represents the weight of $C_{20}H_{14}O_4$ contained in 1 gramme of the powdered tablets. Calculate the average weight of phenolphthalein, $C_{20}H_{14}O_4$, in the tablets.

DOSES. Phenolphthalein, 0·06 to 0·3 gramme; 1 to 5 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 2 grains shall be dispensed or supplied.

Tablets of Phenolphthalein should be masticated before swallowing.

TABELLÆ POTASSII BROMIDI

[Tab. Pot. Brom.]

Tablets of Potassium Bromide

Tablets of Potassium Bromide may be prepared by Dry Granulation, and compression.

The average weight of potassium bromide, KBr, in the tablets, as determined by the Assay described below, is not less than 93 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Potassium Bromide.

Tests for Identity. Yield the *reactions* characteristic of potassium, and of bromides.

Disintegration Test. The Disintegration Test does not apply to Tablets of Potassium Bromide.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Potassii Bromidum'. Calculate the average weight of potassium bromide, KBr, in the tablets.

DOSES. Potassium Bromide, 0·3 to 2 grammes; 5 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

Tablets of Potassium Bromide should be dissolved in water before administration.

TABELLÆ POTASSII CHLORATIS

[Tab. Pot. Chlorat.]

Tablets of Potassium Chlorate

Tablets of Potassium Chlorate may be prepared by Dry Granulation, and compression.

The average weight of potassium chlorate, $KClO_3$, in the tablets, as determined by the Assay described below, is not less than 94 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Potassium Chlorate.

Tests for Identity. Add a tablet to 1 millilitre of *hydrochloric acid*; a yellow liquid is produced, and chlorine and oxides of chlorine are given off.

Heat a tablet; it melts and evolves oxygen, and leaves a residue which yields the *reactions* characteristic of potassium, and of chlorides.

Disintegration Test. The Disintegration Test does not apply to Tablets of Potassium Chlorate.

Assay. Weigh accurately 20 tablets and dissolve in sufficient *water* to produce a definite volume. Carry out the Assay as directed under 'Potassii Chloras', using an accurately measured volume of the solution equivalent to about 0·8 gramme of Potassium Chlorate. Calculate the average weight of potassium chlorate, $KClO_3$, in the tablets.

DOSES. Potassium Chlorate, 0·3 to 0·6 gramme; 5 to 10 grains. If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

Tablets of Potassium Chlorate should be allowed to dissolve slowly in the mouth.

TABELLÆ QUININÆ BISULPHATIS

[Tab. Quinin. Bisulph.]

Tablets of Quinine Bisulphate

Synonym. Tablets of Quinine Acid Sulphate.

Tablets of Quinine Bisulphate may be prepared by Moist Granulation, and compression.

The average weight of anhydrous quinine, $C_{20}H_{24}O_2N_2$, in the tablets, as determined by the Assay described below, is not less than 52 per cent., and not more than 68 per cent., of the prescribed, or stated, amount of Quinine Bisulphate.

Tests for Identity. A solution of the powdered tablets in *water* has a blue fluorescence.

Shake a quantity of the powdered tablets, equivalent to about 0·5 gramme of Quinine Bisulphate, with 10 millilitres of *water*, and filter; the filtrate has a blue fluorescence and complies with the following tests:—

Gives a strongly acid reaction to *solution of litmus*, but not to *solution of congo red*.

Dilute 0·1 millilitre to 5 millilitres with *water*, add 2 or 3 drops of *solution of bromine* and then 1 millilitre of *dilute solution of ammonia*; an emerald green colour is produced.

Yields the *reaction* characteristic of sulphates.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Quinine Bisulphate, as completely as possible in a mixture of 20 millilitres of *water* and 5 millilitres of *dilute hydrochloric acid*, and filter the liquid into a separator. Wash the filter with a mixture of 20 millilitres of *water* and 5 millilitres of *dilute hydrochloric acid* until *complete extraction* of the alkaloid is effected. Shake the acid solution with two successive quantities, each of 20 millilitres, of *chloroform*, washing each chloroform solution with the same 10 millilitres of *water*. Mix the aqueous solutions, make just alkaline with *dilute solution of ammonia* and extract with successive quantities of *chloroform* until *complete extraction* of the alkaloid is effected, washing each chloroform solution with the same 10 millilitres of *water* contained in a second separator. Mix the

chloroform solutions, filter, wash the filter with *chloroform*, remove the chloroform from the filtrate and washings, and dry the residue to constant weight at 100°. Calculate the average weight of anhydrous quinine, $C_{20}H_{24}O_2N_2$, in the tablets.

DOSES. Quinine Bisulphate, 0·06 to 0·6 gramme; 1 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ QUININÆ HYDROCHLORIDI

[Tab. Quinin. Hydrochlor.]

Tablets of Quinine Hydrochloride

Tablets of Quinine Hydrochloride may be prepared by Moist Granulation, and compression.

The average weight of anhydrous quinine, $C_{20}H_{24}O_2N_2$, in the tablets, as determined by the Assay described below, is not less than 73 per cent. and not more than 91·5 per cent. of the prescribed, or stated, amount of Quinine Hydrochloride.

Tests for Identity. Shake a quantity of the powdered tablets, equivalent to about 0·05 gramme of Quinine Hydrochloride, with 10 millilitres of *water*, and filter; the filtrate complies with the following tests:—

Add a few drops of *dilute sulphuric acid*; a blue fluorescence is produced.

Dilute 1 millilitre to 5 millilitres with *water*, add 2 or 3 drops of *solution of bromine*, and then 1 millilitre of *dilute solution of ammonia*; an emerald green colour is produced.

Yields the *reactions* characteristic of chlorides.

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Quinine Hydrochloride, as completely as possible in a mixture of 20 millilitres of *water* and 5 millilitres of *dilute hydrochloric acid*, and complete the Assay as directed under 'Tabellæ Quininæ Bisulphatis', commencing with the words 'and filter the liquid into a separator'. Calculate the average weight of anhydrous quinine, $C_{20}H_{24}O_2N_2$, in the tablets.

DOSES. Quinine Hydrochloride, 0·06 to 0·6 gramme; 1 to 10 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

TABELLÆ SODII BICARBONATIS COMPOSITÆ

[Tab. Sod. Bicarb. Co.]

Compound Tablets of Sodium Bicarbonate

Synonym. Soda Mint Tablets.

Compound Tablets of Sodium Bicarbonate contain Sodium Bicarbonate and Oil of Peppermint.

The average weight of total carbonate, calculated as $NaHCO_3$, in the

tablets, as determined by the Assay described below, is equivalent to not less than 0·30 gramme and not more than 0·35 gramme of $NaHCO_3$.

Sodium Bicarbonate	324 grammes
Oil of Peppermint	4 millilitres

Granulate the Sodium Bicarbonate by the Moist Granulation process. To the dried granules add the Oil of Peppermint previously dissolved in a small quantity of Alcohol (95 per cent.) and mix intimately. Make into 1000 tablets by compression.

Tests for Identity. Yield the *reactions* characteristic of sodium and of bicarbonates and have the odour and taste of Oil of Peppermint.

Test for Purity. Dissolve 1 gramme of the crushed tablets in 100 millilitres of ice-cold *water*, keeping the temperature as low as possible. Titrate immediately with *N/2 hydrochloric acid*, using 2 millilitres of a mixture of equal volumes of *solution of cresol red* and *solution of thymol blue* as indicator; not more than 1·3 millilitres of *N/2 hydrochloric acid* is required (limit of carbonate).

Disintegration Test. The Disintegration Test does not apply to Compound Tablets of Sodium Bicarbonate.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Sodii Bicarbonas'. Calculate the average weight of total carbonate, calculated as $NaHCO_3$, in the tablets.

DOSE. 2 to 6 tablets.

Compound Tablets of Sodium Bicarbonate should be allowed to dissolve slowly in the mouth.

TABELLÆ SODII CITRATIS

[Tab. Sod. Cit.]

Tablets of Sodium Citrate

Tablets of Sodium Citrate may be prepared by Moist or Dry Granulation, and compression.

The average weight of sodium citrate, $C_6H_5O_7Na_3,2H_2O$, in the tablets, as determined by the Assay described below, is not less than 89 per cent., and not more than 112 per cent., of the prescribed, or stated, amount of Sodium Citrate.

Tests for Identity. Yield the *reactions* characteristic of sodium, and of citrates.

Disintegration Test. Maximum time, three minutes.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Sodii Citras'. Calculate the average weight of sodium citrate, $C_6H_5O_7Na_3,2H_2O$, in the tablets.

DOSES. Sodium Citrate, 1 to 4 grammes; 15 to 60 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 2 grains shall be dispensed or supplied.

Tablets of Sodium Citrate should be dissolved in water for use.

TABELLÆ SODII SALICYLATIS

[Tab. Sod. Salicyl.]

Tablets of Sodium Salicylate

Tablets of Sodium Salicylate may be prepared by Moist Granulation, and compression.

The average weight of sodium salicylate, $C_7H_5O_3Na$, in the tablets, as determined by the Assay described below, is not less than 93·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Sodium Salicylate.

Tests for Identity. A 1 per cent. w/v solution of the powdered tablets in *water* yields with *test-solution of ferric chloride* an intense violet colour. Yield the *reactions* characteristic of sodium.

Disintegration Test. The Disintegration Test does not apply to Tablets of Sodium Salicylate.

Assay. Weigh and powder 20 tablets. Transfer an accurately weighed quantity of the powder, equivalent to about 0·3 gramme of Sodium Salicylate, to a separator with the aid of 25 millilitres of *water*. Add 2 millilitres of *dilute hydrochloric acid* and completely extract the liberated salicylic acid with successive quantities, each of 20 millilitres, of *ether*. Evaporate the ether, avoiding volatilisation of salicylic acid. Add 3 millilitres of *alcohol (90 per cent.)*, previously neutralised to *solution of phenol red*, dissolve the salicylic acid, add 15 millilitres of *water*, and titrate with *N/10 sodium hydroxide*, using *solution of phenol red* as indicator. Each millilitre of *N/10 sodium hydroxide* is equivalent to 0·01600 gramme of $C_7H_5O_3Na$. Calculate the average weight of sodium salicylate, $C_7H_5O_3Na$, in the tablets.

DOSES. Sodium Salicylate, 0·6 to 2 grammes; 10 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 5 grains shall be dispensed or supplied.

Tablets of Sodium Salicylate should be dissolved in water before administration.

TABELLÆ STILBŒSTROLIS

[Tab. Stilbœstr.]

Tablets of Stilbœstrol

Synonym. Tablets of Diethylstilbœstrol.

Tablets of Stilbœstrol may be prepared by Moist Granulation, and compression.

The average weight of stilbœstrol, $C_{18}H_{20}O_2$, in the tablets, as determined by the Assay described below, is not less than 89 per cent., and not more than 110 per cent., of the prescribed, or stated, amount of Stilbœstrol.

Test for Identity. The powdered tablets comply with the Test for Identity described under 'Stilbœstrol'.

Assay. Weigh and powder 20 tablets. Macerate an accurately weighed quantity of the powder, equivalent to about 0·005 gramme of Stilbœstrol,

with successive quantities of *anæsthetic ether* until the Stilbœstrol is completely extracted. Filter the ethereal solution, and wash the filter with several successive small quantities of *anæsthetic ether*. Remove the ether, dissolve the residue in 50 millilitres of *alcohol (95 per cent.)*, and add sufficient *water* to produce 100 millilitres; to an accurately measured volume of the solution, equivalent to about 0·0005 gramme of Stilbœstrol, add 2 millilitres of *dilute hydrochloric acid*, 4 millilitres of *solution of sodium molybdophosphotungstate* and 50 millilitres of *water*; allow to stand for ten minutes, add 10 millilitres of a 25 per cent. w/v solution of *anhydrous sodium carbonate* in *water* and sufficient *water* to produce 100 millilitres; mix thoroughly and allow to stand for one hour; filter through a dry filter-paper, rejecting the first portion of the filtrate. In the same manner, mix 5 millilitres of a solution of 0·01 gramme of Stilbœstrol in 50 millilitres of *alcohol (95 per cent.)* and sufficient *water* to produce 100 millilitres with 2 millilitres of *dilute hydrochloric acid*, 4 millilitres of *solution of sodium molybdophosphotungstate* and 50 millilitres of *water*; allow to stand for ten minutes, add 10 millilitres of a 25 per cent. w/v solution of *anhydrous sodium carbonate* in *water* and sufficient *water* to produce 100 millilitres; mix thoroughly and allow to stand for one hour; filter through a dry filter-paper, rejecting the first portion of the filtrate. Determine the ratio of the colour intensities by comparing them in a suitable colorimeter. Calculate the average weight of stilbœstrol, $C_{18}H_{20}O_2$, in the tablets.

DOSES. Stilbœstrol, 0·0005 to 0·002 gramme; $^1/_{120}$ to $^1/_{30}$ grain.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·0005 gramme shall be dispensed or supplied.

TABELLÆ SULPHADIAZINÆ

[Tab. Sulphadiazin.]

Tablets of Sulphadiazine

Tablets of Sulphadiazine may be prepared by Moist Granulation, and compression.

The average weight of sulphadiazine, $C_{10}H_{10}O_2N_4S$, in the tablets, as determined by the Assay described below, is not less than 93·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Sulphadiazine.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Sulphadiazine, with two successive quantities, each of 5 millilitres, of *chloroform*; reject the chloroform. Triturate the residue with 10 millilitres of *dilute solution of ammonia* for five minutes, add 10 millilitres of *water*, and filter. Warm the filtrate until most of the ammonia is expelled, cool and acidify with *acetic acid*. Collect the precipitate, wash with *water*, and dry at about 100°; *melting-point*, of the residue, 252° to 256°.

The residue complies with the Tests for Identity described under 'Sulphadiazina'.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Tabellæ Sulphanilamidi', using an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Sulphadiazine. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02502 gramme of $C_{10}H_{10}O_2N_4S$. Calculate the average weight of sulphadiazine, $C_{10}H_{10}O_2N_4S$, in the tablets.

DOSES. Sulphadiazine, 0·5 to 2 grammes; 8 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·5 gramme shall be dispensed or supplied.

TABELLÆ SULPHAGUANIDINÆ

[Tab. Sulphaguanidin.]

Tablets of Sulphaguanidine

Tablets of Sulphaguanidine may be prepared by Moist Granulation, and compression.

The average weight of sulphaguanidine, $C_7H_{10}O_2N_4S,H_2O$, in the tablets, as determined by the Assay described below, is not less than 93·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Sulphaguanidine.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Sulphaguanidine, with two successive quantities, each of 5 millilitres, of *chloroform*; reject the chloroform. Triturate the residue with 10 millilitres of *dilute hydrochloric acid*, add 5 millilitres of *water*, and filter. To the filtrate add a solution of 3 grammes of *ammonium acetate* in 3 millilitres of *water*, and allow to stand in a cold place for thirty minutes. Collect the precipitate, wash with *water*, and dry at about 100°; *melting-point*, of the residue, 190° to 192·5°.

The residue complies with the Tests for Identity described under 'Sulphaguanidina'.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Tabellæ Sulphanilamidi', using an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Sulphaguanidine. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02323 gramme of $C_7H_{10}O_2N_4S,H_2O$. Calculate the average weight of sulphaguanidine, $C_7H_{10}O_2N_4S,H_2O$ in the tablets.

DOSES. Sulphaguanidine, 0·5 to 2 grammes; 8 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·5 gramme shall be dispensed or supplied.

TABELLÆ SULPHANILAMIDI

[Tab. Sulphanilamid.]

Tablets of Sulphanilamide

Tablets of Sulphanilamide may be prepared by Moist Granulation, and compression.

The average weight of sulphanilamide, $C_6H_8O_2N_2S$, in the tablets, as determined by the Assay described below, is not less than 93 per cent., and not more than 105·5 per cent., of the prescribed, or stated, amount of Sulphanilamide.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Sulphanilamide, with 10 millilitres of *chloroform*; reject the chloroform, and repeat the trituration with 5 millilitres of *chloroform*; reject the chloroform. Macerate the residue with 15 millilitres of *acetone*, filter, evaporate the filtrate on a water-bath, and dry the residue at about 100°; *melting-point*, of the residue, 164·5° to 166·5°.

The residue complies with the Tests for Identity described under 'Sulphanilamidum.'

Assay. Weigh and powder 20 tablets. Dissolve an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Sulphanilamide, as completely as possible in 50 millilitres of *water* and 10 millilitres of *hydrochloric acid*, and complete the Assay as directed under 'Sulphanilamidum', commencing with the words 'Cool the solution'. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·01721 gramme of $C_6H_8O_2N_2S$. Calculate the average weight of sulphanilamide, $C_6H_8O_2N_2S$, in the tablets.

DOSES. Sulphanilamide, 0·5 to 1 gramme; 8 to 15 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·5 gramme shall be dispensed or supplied.

TABELLÆ SULPHAPYRIDINÆ

[Tab. Sulphapyridin.]

Tablets of Sulphapyridine

Tablets of Sulphapyridine may be prepared by Moist Granulation, and compression.

The average weight of sulphapyridine, $C_{11}H_{11}O_2N_3S$, in the tablets as determined by the Assay described below, is not less than 93·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Sulphapyridine.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Sulphapyridine, with two successive quantities, each of 5 millilitres, of *chloroform*; reject the chloroform. Triturate the residue with 10 millilitres of *dilute solution of ammonia* for five minutes, add 10 millilitres of *water*, and filter. Warm the filtrate until most of the ammonia is expelled, cool and acidify with *acetic acid*. Collect the precipitate, wash with *water*, and dry at about 100°; *melting-point*, of the residue, 191° to 193°.

The residue complies with the Tests for Identity described under 'Sulphapyridina'.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Tabellæ Sulphanilamidi', using an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Sulphapyridine. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02492 gramme of $C_{11}H_{11}O_2N_3S$. Calculate the average weight of sulphapyridine, $C_{11}H_{11}O_2N_3S$, in the tablets.

DOSES. Sulphapyridine, 0·5 to 2 grammes; 8 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·5 gramme shall be dispensed or supplied.

TABELLÆ SULPHATHIAZOLI

[Tab. Sulphathiazol.]

Tablets of Sulphathiazole

Tablets of Sulphathiazole may be prepared by Moist Granulation, and compression.

The average weight of sulphathiazole, $C_9H_9O_2N_3S_2$, in the tablets, as determined by the Assay described below, is not less than 93·5 per cent., and not more than 105 per cent., of the prescribed, or stated, amount of Sulphathiazole.

Tests for Identity. Triturate a quantity of the powdered tablets, equivalent to about 0·5 gramme of Sulphathiazole, with two successive quantities, each of 5 millilitres, of *chloroform*; reject the chloroform. Triturate the residue with 10 millilitres of *dilute solution of ammonia* for five minutes, add 10 millilitres of *water*, and filter. Warm the filtrate until most of the ammonia is expelled, cool and acidify with *acetic acid*. Collect the precipitate, wash with water, and dry at about 100°; *melting-point*, of the residue, 200° to 203°.

The residue complies with the Tests for Identity described under 'Sulphathiazolum'.

Assay. Weigh and powder 20 tablets. Carry out the Assay as directed under 'Tabellæ Sulphanilamidi', using an accurately weighed quantity of the powder, equivalent to about 0·5 gramme of Sulphathiazole. Each millilitre of *M/10 sodium nitrite* is equivalent to 0·02552 gramme of $C_9H_9O_2N_3S_2$. Calculate the average weight of sulphathiazole, $C_9H_9O_2N_3S_2$, in the tablets.

DOSES. Sulphathiazole, 0·5 to 2 grammes; 8 to 30 grains.

If the quantity to be contained in a tablet is not stated, tablets containing, in each, 0·5 gramme shall be dispensed or supplied.

TERPINEOL

[Terpineol.]

Terpineol

See Sixth Addendum to the British Pharmacopœia, 1932, page 28.

The statement 'Insoluble in water' is changed to 'Very slightly soluble in *water*'.

The requirement for *specific gravity* (*15·5°/15·5°*) is changed from '0·934 to 0·938' to '0·936 to 0·940'.

THEOPHYLLINA CUM ÆTHYLENEDIAMINA

[Theophyll. c. Æthylenediam.]

Theophylline with Ethylenediamine

Synonym. Aminophylline.

Theophylline with Ethylenediamine may be prepared by dissolving theophylline in ethylenediamine and evaporating the solution to dryness. It contains not less than 71·5 per cent., and not more than 78·5 per cent., of anhydrous theophylline, $C_7H_8O_2N_4$, and not less than 11·8 per cent., and not more than 13·2 per cent., of ethylenediamine, $C_2H_8N_2$, both calculated with reference to the substance dried over *sulphuric acid* in a vacuum desiccator for forty-eight hours.

Characters. White, or yellowish-white, granules; odour, faintly ammoniacal; taste, bitter.

Soluble in about 5 parts of *water* at 25°; insoluble in *dehydrated alcohol* and in *ether*.

An aqueous solution is distinctly alkaline to *solution of litmus*; on exposure to air it gradually absorbs carbon dioxide with the liberation of theophylline.

Tests for Identity. Dissolve about 0·5 gramme in 25 millilitres of *water*, add, with constant stirring, 1 millilitre of *dilute hydrochloric acid*, filter, and wash the precipitate with successive small quantities of cold *water*. The precipitate after recrystallisation from hot *water* and drying at 100°, complies with the following tests:—

Melting-point, 269° to 272°.

Treat a few milligrams with *hydrochloric acid*, *potassium chlorate* and ammonia vapour as described under 'Theophyllina'; a purple colour is produced.

Tests for Purity. Loses, when dried over *sulphuric acid* in a vacuum desiccator for forty-eight hours, not more than 4·5 per cent. of its weight.

Leaves, on incineration, not more than 0·1 per cent. of residue.

Assay. *For theophylline.* Dissolve about 0·5 gramme, accurately weighed, in 20 millilitres of *water*, add 3 or 4 drops of *solution of bromocresol green* and *N/2 hydrochloric acid* until the colour of the liquid becomes yellow. Dissolve 5 grammes of *sodium chloride* in the liquid, transfer to a separator, and extract by shaking with four successive quantities, each of 25 millilitres, of a mixture of 3 volumes of *chloroform* and 1 volume of *isopropyl alcohol*. Wash each chloroform-isopropyl alcohol solution with the same 10 millilitres of *water*. Mix the solutions, evaporate to dryness on a water-bath, dry the residue at 100°, and weigh.

For ethylenediamine. Dissolve about 0·5 gramme, accurately weighed, in 20 millilitres of *water* and titrate with *N/10 hydrochloric acid*, using *solution of bromocresol green* as indicator. Each millilitre of *N/10 hydrochloric acid* is equivalent to 0·0030 gramme of ethylenediamine, $C_2H_8N_2$.

Storage. Theophylline with Ethylenediamine should be kept in an air-tight container.

DOSES

Metric.	Imperial.
0·1 to 0·3 gramme.	1½ to 5 grains.

THIOPENTONUM SOLUBILE

[Thiopent. Solub.]

Soluble Thiopentone

Soluble Thiopentone is a mixture of one hundred parts by weight of the mono-sodium derivative of 5-ethyl-5-(1-methylbutyl)-thiobarbituric acid, and six parts by weight of Exsiccated Sodium Carbonate. It contains not less than 84 per cent., and not more than 87 per cent., of $C_{11}H_{18}O_2N_2S$, and not less than 10·0 per cent., and not more than 11·0 per cent., of Na, both calculated with reference to the substance dried at 70° for twenty-four hours.

Characters. A yellowish-white, hygroscopic powder; odour, somewhat alliaceous; taste, bitter.

Soluble in *water*; partially soluble in *alcohol*; insoluble in *ether*, and in *benzene*.

Tests for Identity. A 2·5 per cent. w/v solution in water is strongly alkaline, having *p*H about 10·5.

Boil about 0·2 gramme with 5 millilitres of a 25 per cent. w/v solution of *sodium hydroxide* in water; no ammonia is evolved.

Dissolve about 0·5 gramme in 100 millilitres of *water* and acidify the solution with *dilute hydrochloric acid*; collect the precipitate on a filter, wash with *water* and dry at 70°; *melting-point* of the residue, 156° to 159°.

The residue, left after incineration, yields the *reactions* characteristic of sodium and when heated with *dilute hydrochloric acid* evolves hydrogen sulphide.

Tests for Purity. Dissolve about 0·5 gramme in 50 millilitres of *water*, add 5 millilitres of *dilute nitric acid* and filter; the filtrate diluted with an equal volume of *water* complies with the following tests:—

To 20 millilitres add 1 millilitre of *solution of silver nitrate*; not more than a faint opalescence is produced (limit of chlorides).

To 20 millilitres add 1 millilitre of *solution of barium chloride*; not more than a very slight turbidity is produced (limit of sulphates).

Lead limit, 10 parts per million.

Loses, when dried at 70° for twenty-four hours, not more than 2 per cent. of its weight.

Assay. *For sodium.* Dissolve about 0·6 gramme, accurately weighed, in 20 millilitres of *water*, add 1 drop of *solution of methyl red*, and titrate with *N/10 sulphuric acid* until the yellow colour changes to pink; boil gently for one or two minutes, cool, and, if necessary, continue the titration with *N/10 sulphuric acid* until the pink colour is restored. Each millilitre of *N/10 sulphuric acid* is equivalent to 0·0023 gramme of Na.

For $C_{11}H_{18}O_2N_2S$. To the liquid from the Assay for sodium add a further 5 millilitres of *N/10 sulphuric acid* and extract with successive quantities of 25, 25, 20, 15, 15 and 10 millilitres of *chloroform*, washing each extract with the same 5 millilitres of *water*: remove the chloroform from the mixed extracts by evaporation and dry the residue to constant weight at 70°.

Storage. Soluble Thiopentone must be kept in an atmosphere of nitrogen in sealed tubes, and should be kept protected from light and stored in a cool place.

Sterilisation of a Solution. Soluble Thiopentone is prepared in sterile solution for injection by dissolving the contents of a sealed container in the requisite amount of Sterilised Water, and the solution is used immediately after preparation.

DOSES

By intravenous injection.

Metric.	Imperial.
0·1 to 0·3 gramme.	1½ to 5 grains.

TINCTURA BELLADONNÆ

[Tinct. Bellad.]

Tincture of Belladonna

Belladonna Herb is used in making this Tincture.

TINCTURA COLCHICI

[Tinct. Colch.]

Tincture of Colchicum

Liquid Extract of Colchicum Corm may be used, in place of Liquid Extract of Colchicum, in making this Tincture.

TROCHISCI

Lozenges

A mixture of one volume of Concentrated Tincture of Tolu and three volumes of water may be used, in place of Tincture of Tolu, in making Lozenges.

UNGUENTUM ACIDI BORICI

[Ung. Acid. Boric.]

Ointment of Boric Acid

Synonym. Boric Acid Ointment.

Boric Acid, finely sifted	10 grammes
Paraffin Ointment, white	990 grammes

Melt the Paraffin Ointment; sift in the Boric Acid; stir, until cold.

UNGUENTUM ACIDI SALICYLICI

[Ung. Acid. Salicyl.]

Ointment of Salicylic Acid

Synonym. Salicylic Acid Ointment.

Salicylic Acid, finely sifted	20 grammes
Ointment of Wool Alcohols	980 grammes

Melt the Ointment of Wool Alcohols; add the Salicylic Acid; stir, until cold.

UNGUENTUM ACIDI TANNICI

[Ung. Acid. Tann.]

Ointment of Tannic Acid

Synonym. Tannic Acid Ointment.

Tannic Acid	200 grammes
Glycerin	200 grammes
Simple Ointment, prepared with Yellow Soft Paraffin	600 grammes

Dissolve the Tannic Acid in the Glycerin, and incorporate the solution with the Simple Ointment.

UNGUENTUM ALCOHOLIUM LANÆ

[Ung. Alcoh. Lanæ]

Ointment of Wool Alcohols

Wool Alcohols	60 grammes
Hard Paraffin	240 grammes
White Soft Paraffin, or Yellow Soft Paraffin	100 grammes
Liquid Paraffin	600 grammes

Melt together; stir, until cold.

In preparing this Ointment the proportions of Hard Paraffin, Soft Paraffin and Liquid Paraffin may be varied, and the Liquid Paraffin may be replaced wholly or partly by Light Liquid Paraffin, in order to produce an Ointment of Wool Alcohols having suitable properties.

UNGUENTUM HAMAMELIDIS

[Ung. Hamam.]

Ointment of Hamamelis

Liquid Extract of Hamamelis . . .	10 millilitres
Wool Fat	50 grammes
Yellow Soft Paraffin	40 grammes

Mix by trituration in a warm mortar.

In making Ointment of Hamamelis the Liquid Extract of Hamamelis may be replaced by a liquid extract of hamamelis prepared with Industrial Methylated Spirit, suitably diluted, provided that the law and the statutory regulations governing the use of Industrial Methylated Spirit are observed.

UNGUENTUM HYDRARGYRI AMMONIATI

[Ung. Hydrarg. Ammon.]

Ointment of Ammoniated Mercury

Synonyms. Unguentum Hydrargyri Ammoniati Dilutum: Ammoniated Mercury Ointment: White Precipitate Ointment.

Ammoniated Mercury, finely powdered .	25 grammes
Simple Ointment	975 grammes

Triturate the Ammoniated Mercury with a portion of the Simple Ointment, until smooth; gradually add the remainder, mixing thoroughly by trituration.

UNGUENTUM HYDRARGYRI AMMONIATI AQUOSUM

[Ung. Hydrarg. Ammon. Aquos.]

Hydrous Ointment of Ammoniated Mercury

Ammoniated Mercury, finely powdered .	10 grammes
Hydrous Ointment	990 grammes

Triturate the Ammoniated Mercury with a portion of the Hydrous Ointment, until smooth; gradually add the remainder, mixing thoroughly by trituration.

UNGUENTUM SULPHURIS

[Ung. Sulphur.]

Ointment of Sulphur

Synonym. Sulphur Ointment.

Sublimed Sulphur, finely sifted	100 grammes
Simple Ointment, prepared with White Soft Paraffin	900 grammes

Triturate the Sublimed Sulphur with a portion of the Simple Ointment, until smooth; gradually add the remainder, mixing thoroughly by trituration.

UNGUENTUM ZINCI OXIDI

[Ung. Zinc. Oxid.]

Ointment of Zinc Oxide

Synonyms. Unguentum Zinci; Zinc Ointment.

Zinc Oxide, finely sifted	150 grammes
Simple Ointment	850 grammes

Triturate the Zinc Oxide with a portion of the Simple Ointment, until smooth; gradually add the remainder, mixing thoroughly by trituration.

UNGUENTUM ZINCI OXIDI AQUOSUM

[Ung. Zinc. Oxid. Aquos.]

Hydrous Ointment of Zinc Oxide

Zinc Oxide, finely sifted	150 grammes
Hydrous Ointment	850 grammes

Triturate the Zinc Oxide with a portion of the Hydrous Ointment, until smooth; gradually add the remainder, mixing thoroughly by trituration.

VACCINUM VACCINIÆ

[Vaccin. Vacciniæ]

Vaccine Lymph

CAUTION.—In any part of the British Empire in which Vaccine Lymph is controlled by law, care must be taken that the provisions of such law are duly complied with. *(See British Pharmacopœia, 1932, page 12.)*

Vaccine Lymph is a preparation of vaccinal material which is

obtained from the vesicles produced by inoculation of vaccinia virus on the skin of healthy animals. It is prepared with precautions to exclude bacterial contamination as far as possible.

The vaccinal material, having been transferred to sterile vessels, is treated with Glycerin, or other partial disinfectant, to reduce the total number of living bacteria and other micro-organisms to not more than 20,000 per millilitre. It is tested to ensure compliance with the Tests for Purity in respect of *Bacillus anthracis*, *Bacterium coli*, *Clostridium tetani* and β-haemolytic streptococci. It is stored at a temperature below 0° until it is introduced into sterilised glass containers which are then sealed so as to exclude bacteria. These glass containers are kept at a temperature below 0° until required for issue.

Characters. A viscid, colourless liquid containing opaque white matter in suspension.

Test for Identity. It produces the characteristic lesion of vaccinia virus when applied to a scarified area of the skin of a calf, sheep, rabbit or guinea-pig.

Tests for Purity. Contains not more than 20,000 living bacteria and other micro-organisms per millilitre.

Complies with the *Tests for Purity of Vaccine Lymph* in respect of *Bacillus anthracis*, *Bacterium coli*, *Clostridium tetani* and β-haemolytic streptococci.

Potency. A mixture, containing one volume and 1000 volumes of *physiological solution of sodium chloride*, or other suitable diluent, when applied to the suitably prepared skin of a rabbit produces the characteristic lesion of vaccinia virus. For purposes of comparison a similar dilution of a lymph of known potency is applied simultaneously to the skin of the same animal. The test for potency shall be applied not more than six months before the lymph is finally issued.

Storage. Vaccine Lymph is kept at a temperature below 0° until required for use. Vaccine Lymph when stored continuously at a temperature below 0° maintains its potency for at least six months. When stored continuously at temperatures below 10° the potency may be expected to be retained for fourteen days, but, when stored at temperatures above 10° the potency cannot be assured beyond seven days.

Labelling. The label on the container, or a label or wrapper affixed to the package containing the Vaccine Lymph, states the date of manufacture and the conditions to be observed for maintaining the potency of the lymph.

Containers. The containers should be glass capillary tubes of a size sufficient to hold one human dose and sealed so as to exclude bacteria. Containers to hold several doses may be used when required.

DOSES

Metric.	Imperial.
By scarification.	
0·06 mil.	1 minim.

APPENDICES

APPENDIX I

MATERIALS AND SOLUTIONS EMPLOYED IN TESTS

Add the following reagents :—

Ascorbic Acid : of the British Pharmacopœia.

Benzoyl Chloride : C_6H_5COCl, of Reagent purity.

Dinitrobenzene : *m*-dinitrobenzene, of Reagent purity.

Dioxan : $C_4H_8O_2$, of Reagent purity.

Ferric Ammonium Sulphate, Acid Solution of : dissolve 0·2 gramme of *ferric ammonium sulphate* in 50 millilitres of *water*, add 6 millilitres of *dilute nitric acid* and sufficient *water* to produce 100 millilitres.

Isopropyl Alcohol : $(CH_3)_2CHOH$, of Reagent purity.

Metaphosphoric Acid : HPO_3, of Reagent purity.

Metaphosphoric Acid, Solution of : a 20 per cent. w/v solution of *metaphosphoric acid* in *water*.

Solution of Metaphosphoric Acid must be freshly prepared.

Œstrone : of the British Pharmacopœia.

Phenacetin : of the British Pharmacopœia.

Phosphomolybdic Acid : $H_3PO_4.12MoO_3.12H_2O$, of Reagent purity.

Potassium Thiocyanate : KSCN, of Reagent purity.

Sodium Molybdophosphotungstate, Solution of : boil for two hours in a flask fitted with a reflux condenser, 350 millilitres of *water*, 50 grammes of *sodium tungstate*, 12 grammes of *phosphomolybdic acid* and 25 millilitres of *phosphoric acid* ; cool and add sufficient *water* to produce 500 millilitres.

Sodium Tungstate : $Na_2WO_4.2H_2O$, of Reagent purity.

Zinc Chloride : of the British Pharmacopœia.

APPENDIX II

A. *SOLUTIONS EMPLOYED IN VOLUMETRIC DETERMINATIONS*

Add the following solutions.—

Solution of 2 : 6-Dichlorophenolindophenol, Standard.

Dissolve 0·05 gramme of *2 : 6-dichlorophenolindophenol* in 100 millilitres of *water*, and filter.

Dissolve about 0·02 gramme, accurately weighed, of *ascorbic acid* in

10 millilitres of *solution of metaphosphoric acid*, and dilute to 250 millilitres with *water*. Titrate 5 millilitres rapidly with the solution of 2 : 6-dichlorophenolindophenol, added from a micro-burette graduated in 1/100ths of a millilitre, until the pink colour of the dye persists for ten seconds, the titration occupying not more than two minutes. Dilute the solution of 2 : 6-dichlorophenolindophenol with *water*, to make 1 millilitre of the solution equivalent to 0·1 milligram of ascorbic acid, $C_6H_8O_6$.

Standard Solution of 2 : 6 Dichlorophenolindophenol must not be used later than three days after preparation, and must be standardised immediately before use.

Solution of Potassium Bromide, N/1000.

Potassium bromide dissolved in *water* to contain in 1000 millilitres 0·1190 gramme of KBr.

Solution of Sodium Carbonate, 2N.

for 2N . . . . . 106 grammes Na_2CO_3

Solution of Sodium Nitrite, M/10.

Sodium nitrite dissolved in *water* to contain in 1000 millilitres the following quantity of $NaNO_2$:—

for M/10 . . . . . 6·901 grammes $NaNO_2$

Solution of Sodium Thiosulphate, N/50.

for N/50 . . . . . 4·964 grammes $Na_2S_2O_3.5H_2O$

B. *INDICATORS EMPLOYED IN VOLUMETRIC DETERMINATIONS AND IN pH DETERMINATIONS*

Add the following :—

Starch-iodide Paste : dissolve 0·75 gramme of *potassium iodide* in 5 millilitres of *water* and 2 grammes of *zinc chloride* in 10 millilitres of *water* ; mix the solutions and add 100 millilitres of *water*. Heat the solution to boiling and add, with constant stirring, a suspension of 5 grammes of *starch* in 35 millilitres of *water*. Boil for two minutes and cool.

Starch-iodide Paste should be kept in a well-closed container, in a cool place.

APPENDIX VI

QUANTITATIVE TEST FOR LEAD

Reagents and Solutions

Add the following reagent :—

Ammonium Acetate PbT. *Ammonium acetate* which complies with the following additional test :—Dissolve 2 grammes in 25 millilitres of *water*, make alkaline with *solution of ammonia PbT.*, add 1 millilitre of *solution of potassium cyanide PbT.*, dilute to 50 millilitres with *water*, and add two drops of *solution of sodium sulphide PbT.* ; no darkening is produced.

In the Tables, British Pharmacopœia, 1932, pages 553 to 558, insert :—

Pentobarbitonum Solubile	1·5[k]	—	0·5[k]	—	1	10
Potassii Sulphas	7	5	2	5	10	20
Sulphacetamidum	2[b]	—	1[b]	—	1	10
Sulphacetamidum Solubile	2[b]	—	1[b]	—	1	10
Sulphadiazina	2[b]	—	1[b]	—	1	10
Sulphadiazina Solubilis	2[b]	—	1[b]	—	1	10
Sulphaguanidina	2[l]	5	—[l]	5	2	10
Sulphapyridina	2[b]	—	1[b]	—	1	10
Sulphapyridina Solubilis	2[b]	—	1[b]	—	1	10
Sulphathiazolum	2[b]	—	1[b]	—	1	10
Sulphathiazolum Solubile	2[b]	—	1[b]	—	1	10
Thiopentonum Solubile	1·5[k]	—	0·5[k]	—	1	10

[b] Test carried out by adding to each solution 7 millilitres of *solution of sodium hydroxide PbT.*, 1 millilitre of *solution of potassium cyanide PbT.* and 2 drops of *solution of sodium sulphide PbT.*

[k] Solutions prepared by dissolving in *water*, adding 4·5 millilitres of *dilute hydrochloric acid PbT.* slowly with constant stirring, allowing to stand for some minutes and filtering.

[l] Primary solution prepared by boiling 2 grammes, until a clear solution is obtained, with a solution of 2 grammes of *ammonium acetate PbT.* in a mixture of the *acetic acid PbT.* and 40 millilitres of *water*, cooling and filtering by suction. Auxiliary solution, 2 grammes of *ammonium acetate PbT.* dissolved in a mixture of 40 millilitres of *water* and the *acetic acid PbT.*

APPENDIX VII

QUANTITATIVE TEST FOR ARSENIC

Methods of Preparing the Solution to be Examined

Add the following Methods:—

Potassii Sulphas. Limit 5 parts per million.

Treat 2 grammes as described under 'Acidum Citricum'.

Sulphacetamidum. Limit 2 parts per million.

Mix 5 grammes with 2 grammes of *calcium hydroxide AsT.* and 5 millilitres of *water* in a porcelain dish, gently heat to dryness, and ignite until the organic matter has been destroyed; cool, add a mixture of 16 millilitres of *brominated hydrochloric acid AsT.* and 5 millilitres of *solution of bromine AsT.*, followed by 40 millilitres of *water*, boil gently, adding sufficient *solution of bromine AsT.* from time to time to maintain a slight excess; filter, and remove the excess of bromine by *solution of stannous chloride AsT.*

Sulphacetamidum Solubile. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphadiazina. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphadiazina Solubilis. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphaguanidina. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphanilamidum'.

Sulphapyridina. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphapyridina Solubilis. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphathiazolum. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

Sulphathiazolum Solubile. Limit 2 parts per million.

Treat 5 grammes as described under 'Sulphacetamidum'.

APPENDIX XV.

H. *BIOLOGICAL ASSAY OF PITUITARY (POSTERIOR LOBE) EXTRACT*

CAUTION.—In any part of the British Empire in which Pituitary (Posterior Lobe) Extract is controlled by law, care must be taken that the provisions of such law are duly complied with. (*See British Pharmacopœia, 1932, page 12.*)

The activity of a sample of pituitary (posterior lobe) extract is determined by comparing its activity with that of the Standard Preparation of Pituitary (Posterior Lobe) Extract by a biological method. For this purpose an extract of the Standard Preparation, or of an equivalent laboratory standard preparation, must be prepared. Since the amount of the Standard Preparation, which will be supplied on request, is limited, each worker should prepare for use as a laboratory standard preparation a quantity of dry pituitary powder, the strength of which must be determined in relation to that of the Standard Preparation.

1. Standard Preparation of Pituitary (Posterior Lobe) Extract.

The Standard Preparation for Great Britain and Northern Ireland is that defined in the Regulations made under the Therapeutic Substances Act, 1925. The Standard Preparation is a quantity of dried acetone-extracted substance, obtained from the posterior lobes of fresh pituitary bodies of oxen, and is kept in the National Institute for Medical Research, Hampstead, London. The Standard Preparation for other parts of the British Empire is the same, except for those countries in which a similar standard preparation, kept in a different institute, has been defined by law; in these countries the standard preparation, so defined, is used.

2. The Unit of Pituitary (Posterior Lobe) Extract.

The Unit for Great Britain and Northern Ireland is that defined in the Regulations made under the Therapeutic Substances Act, 1925, and is the specific activity (oxytocic, antidiuretic, or pressor) corresponding to that yielded by 0·5 milligram of the Standard Preparation, when extracted by the prescribed method. The Unit is the same as the international unit. The Unit for other parts of the British Empire is the same, except for those countries in which a similar unit has been defined by law; in these countries the unit, so defined, is used.

3. Method.

A. PREPARATION OF DRY PITUITARY (POSTERIOR LOBE) POWDER (LABORATORY STANDARD PREPARATION).

Pituitary bodies are obtained from a number of cattle as soon as possible after slaughter. The pear-shaped posterior lobes are dissected free from other tissue, and dropped into a flask containing 4 millilitres of *acetone* for each posterior lobe. At the end of three hours they are cut up into small pieces, and placed in a similar amount of *acetone* until the next day. The material is then removed from the acetone, dried in an evacuated desiccator over *calcium chloride* for five hours, and ground in a mortar so as to pass through a *No. 44 sieve*. The resulting powder is again dried

in an evacuated desiccator overnight, and extracted in a *continuous extraction* apparatus with *acetone* for three hours. It is once more dried overnight in an evacuated desiccator over *phosphorus pentoxide*. It may be stored in sealed ampoules, or in an evacuated desiccator over *phosphorus pentoxide*. Before use it must be assayed by several comparisons with a sample of the Standard Preparation.

B. Extract of the Standard Preparation or of the Laboratory Standard Preparation.

From the stock of dry powder in the desiccator a small portion, corresponding to about 20 Units of the Standard Preparation, is transferred rapidly to a weighing bottle, and the bottle is at once closed. The powder is weighed. It is washed into a dry, hard-glass boiling-tube with one half as many millilitres of a mixture of 0·25 millilitre of *glacial acetic acid* and a sufficient quantity of *water* to produce 100 millilitres, as there are Units present in the quantity of powder taken. The top of the boiling-tube is plugged with cotton wool, and the tube is placed for five minutes in a briskly boiling water-bath. The tube is then quickly cooled, and the liquid is filtered through a dry filter-paper into another hard glass tube. The filtrate is an extract of the Standard Preparation, or of the equivalent laboratory standard preparation, and contains 2 Units per millilitre. It is diluted ten times with the mixture of 0·25 millilitre of *glacial acetic acid* and a sufficient quantity of *water* to produce 100 millilitres. The diluted filtrate is distributed into a series of hard glass tubes, each of which is plugged with cotton wool, and sterilised by being placed in boiling water for three minutes. It is stored at 0°, and, provided the plug is not removed, remains unchanged in activity for six months. It must not be used as a standard later than six months after preparation.

C. Suggested Details of Method of Comparison.

i. *Oxytocic Activity.*

Female guinea-pigs, as soon as they are weaned, should be separated from the males, and used for the test when they weigh between 170 and 270 grammes.

A guinea-pig is killed and one horn of the uterus is suspended in a bath containing a solution of the following composition :—

Sodium Chloride	9·0 grammes
Potassium Chloride . . .	0·42 gramme
Calcium Chloride	0·24 gramme (calculated as anhydrous salt)
Sodium Bicarbonate . . .	0·5 gramme
Dextrose	0·5 gramme
Magnesium Chloride . . .	0·0025 gramme
Water (distilled and condensed in glass)	1000 millilitres

The bath is maintained at a temperature of 37°, and suitably oxygenated. The muscle is suspended in such a way that its contractions are recorded on the surface of a moving paper.

A suitable dose of a pituitary (posterior lobe) extract, usually from 0·05 to 0·1 Unit for a bath of 100 millilitres, when added to the solution in the bath, causes a contraction of the muscle which increases with the

dosage. When the contraction is complete, the liquid in the bath is replaced by fresh solution, and the muscle then relaxes. Repeated additions of pituitary extract may be made at regular intervals. By using doses which produce submaximal contractions, the strength of an unknown extract may be compared with that of the extract of the Standard Preparation.

The test should aim at making the following two determinations :—

(i) The greatest dose of the extract being tested which will produce a contraction smaller than that produced by a given dose of the extract of the Standard Preparation.

(ii) The least dose of the extract being tested which will produce a contraction greater than that produced by a given dose of the extract of the Standard Preparation.

Each of these two determinations should rest on the evidence of a series of not less than four contractions, produced by successive additions in the following order :—

x millilitres of the extract of the Standard Preparation.
y millilitres of the extract of the sample being tested.
y millilitres of the extract of the sample being tested.
x millilitres of the extract of the Standard Preparation.

The activity of an extract is expressed in Units per millilitre.

The limit of error is ± 20 per cent.

ii. *Antidiuretic Activity.*

Sixteen male rats of similar weight are selected and kept without food overnight. The weight of each rat should not be less than 120 grammes or more than 240 grammes.

Warm water is given to the rats by stomach tube in amount corresponding to 5 millilitres per 100 grammes of body weight, and pituitary (posterior lobe) extract is then immediately injected subcutaneously into each rat. The first eight rats receive a suitable dose (for example, 0·006 Unit) per 100 grammes of body weight of the Standard Preparation, injected in a volume of 0·2 millilitre per 100 grammes. The second eight rats receive 0·2 millilitre per 100 grammes of a dilution in isotonic saline solution of the preparation being tested, so made as to have an expected activity equivalent to that of the dilution of the Standard Preparation.

The rats are placed in groups of four in cages constructed so that urine may be collected in graduated measuring cylinders. The time is noted when each group of four rats receives water and an injection of pituitary (posterior lobe) extract.

The time when urine is first collected is noted for each cage and the volume is recorded. Thereafter the volume is recorded at intervals of fifteen minutes. After three to four hours from the time water was administered the excretion of urine stops or becomes very small, and observations are discontinued. The total volume of urine excreted by the group is observed and the time when half this volume was excreted is determined from the recorded observations. The period from the administration of water to this time is calculated in minutes.

The rats are fed, and not less than twenty-four hours later are prepared for the second part of the test by taking away food overnight. The second part of the test is carried out in the same way except that the rats which

received the Standard Preparation now receive the preparation being tested, while those which received the preparation being tested now receive the Standard Preparation. From the results of the two parts of the test, figures are obtained for the mean time from the administration of water to the excretion of half the total volume of urine both for rats receiving the Standard Preparation and for rats receiving the preparation being tested. These mean times should lie between 135 and 175 minutes. If they are the same for the Standard Preparation and for the preparation being tested, then the volume of preparation being tested injected per 100 grammes contains the number of Units of the Standard Preparation which was injected per 100 grammes.

If the times are different, then the relative potency of the doses of the preparation being tested and the Standard Preparation injected can be determined by reference to a predetermined curve, relating the dose injected to the time for excretion of half the volume of water. As a guide to such a curve the following relation is given as an example :—

Dose Unit per 100 grammes.	Time to Excretion of Half Total Volume.
0·004	140 minutes
0·006	156·5 ,,
0·008	166 ,,
0·012	180·5 ,,

Thus, if the mean time to excretion of half the total volume was 166 minutes for rats receiving 0·0006 millilitre per 100 grammes of the preparation being tested, and if the mean time was 140 minutes for rats receiving 0·006 Unit per 100 grammes of the Standard Preparation, then it follows from the above table that the relation of the potency of the dose of the preparation being tested to the potency of the dose of the Standard Preparation is as $\frac{0·008}{0·004}$, which is as 2 to 1. Hence, 0·0006 millilitre of the preparation being tested contains 2 × 0·006 Unit. Or the preparation being tested contains 20 Units per millilitre.

iii. *Pressor Activity.*

A full-grown healthy cat is anæsthetised with a volatile anæsthetic and a tracheal tube is inserted. The spinal cord is exposed from behind by removal of part of the second cervical vertebra, and divided. The brain is destroyed by passing a suitable instrument through the foramen magnum which is then plugged with a cork. Artificial respiration is immediately started through the tracheal tube, and the preparation is left for one hour to remove the anæsthetic. The rectal temperature is kept about normal by means of a warmed table.

The blood pressure is recorded by means of a mercury manometer attached to a cannula in a carotid artery. The initial pressure should be approximately constant and equivalent to 50 to 100 millimetres of mercury. Injections are made through rubber tubing attached to a cannula in a suitable large vein and immediately washed in with isotonic saline solution, and the effect on the blood pressure is recorded. Repeated injections of pituitary (posterior lobe) extract are made at regular intervals of time. The interval depends upon the cat and the dose used. In good conditions a dose of 0·05 to 0·1 Unit at intervals of thirty minutes will give constant

of suitable size. With larger doses the response tends to diminish with each successive injection, and, if this occurs, the interval should be increased until the response to a standard dose remains constant. The response must be large compared with the effect of the injection of a similar volume of isotonic saline solution, but small compared with the largest possible effect. The doses of the standard extract and of the extract being tested are adjusted until they produce equal effects. It is convenient to give a constant dose of the standard preparation, alternately with varying doses of the preparation being tested, and to calculate the result from the mean of the smallest dose to produce an effect larger than the standard effect, and the largest dose to produce an effect smaller than the standard effect. The arrangement of doses described for oxytocic assay gives more reliable results but takes more time. The activity is expressed in Units per millilitre.

W. *BIOLOGICAL ASSAY OF PROTAMINE ZINC INSULIN*

TEST FOR RETARDATION OF THE INSULIN EFFECT.

This test, by which the effective retardation of the hypoglycæmia produced by the protamine zinc insulin is compared with the hypoglycæmia produced by insulin, is similar to the rabbit assay with the following modifications :—

(*a*) *Mode of Injection.* The preparation being tested is injected without previous dilution, using a suitable syringe which will accurately deliver a fixed small volume, e.g. 1/40 millilitre, or one by which a small volume adjusted to the body weight may be injected. The solution of the Standard Preparation is made up so as to possess the same activity as the preparation being tested is expected to possess, and equal volumes of the two solutions are injected.

(*b*) *Dosage.* If the average blood sugar curve for the rabbits receiving the Standard Preparation does not return to the initial level in about five hours when the usual dose of 1 Unit per 2 kilograms of rabbit is injected, the dosage should be adjusted so as to bring this about, i.e. such a dose should be used that the average blood sugar percentage of the rabbits injected with the Standard Preparation returns to the initial level in about five hours.

If the average blood sugar percentage of the rabbits receiving the Standard Preparation has not returned to the initial level within five hours, it is desirable to determine the blood sugar content at the sixth hour after injection.

(*c*) *Blood Samples.* Blood samples should be taken at hourly intervals, and the mean value of the glucose content determined for each hour and group.

(*d*) *Calculation of Retarding Efficiency.* The average blood sugar curves for the standard and the test preparation should be plotted on the same diagram, preferably as percentages of the corresponding average initial blood sugar level.

At the time when the average blood sugar percentage of the rabbits receiving the Standard Preparation has just returned to the initial level, that of the rabbits receiving the protamine preparation should not be more than 80 per cent. of the corresponding initial value.

If the blood sugar value for the rabbits receiving the Standard Preparation does not return completely to the initial level, the time at which it has returned to 90 per cent. of the initial value is taken. At this time the blood sugar value of the rabbits receiving the preparation being tested should not be more than 72 per cent. of the corresponding initial value.

At least ten rabbits should be used for the test.

APPENDIX XVI

SPECIAL PROCESSES USED IN PREPARING SOLUTIONS AND SUSPENSIONS FOR PARENTERAL INJECTION

In the list headed *Sterilisation of Solutions of Pharmacopœial Substances*, Fourth Addendum to the British Pharmacopœia, 1932, pages 52 to 54, insert :—

Amethocainæ Hydrochloridum. *Heating with a bactericide*, or *filtration*. The containers comply with the *tests for limit of alkalinity of glass*.

Menaphthonum. Prepared with a suitable oil or ester, and distributed in the final containers, which are then either finally sealed, or temporarily closed so as to exclude bacteria. When the volume in each container does not exceed 30 millilitres, the containers are heated at 150° for one hour. When the volume in each container exceeds 30 millilitres, the containers are heated for a longer time, sufficient to ensure that the whole of the solution in each container is maintained at 150° for one hour. Containers which have been temporarily closed are then finally sealed.

Œstradiolis Monobenzoas. Prepared by aseptic methods with a suitable oil or ester, which has previously been heated at 150° for one hour. The solution is transferred to previously sterilised containers, and these are sealed so as to exclude bacteria.

Œstronum. Prepared by the method described under 'Œstradiolis Monobenzoas'.

Progesteronum. Prepared by the method described under 'Œstradiolis Monobenzoas'.

Stilbœstrol. Prepared by the method described under 'Menaphthonum'.

Strophanthinum-G. *Heating in an autoclave*, or *filtration*.

Sulphacetamidum Solubile. Prepared with freshly prepared Distilled Water which has been boiled until free from carbon dioxide. The solution is distributed, with as little exposure to air as possible, in suitable containers holding a single dose, which are immediately finally sealed, and sterilised by exposure to saturated steam at 115° to 116° for thirty minutes.

Sulphadiazina Solubilis. Prepared as directed under 'Sulphacetamidum Solubile'.

Sulphapyridina Solubilis. Prepared as directed under 'Sulphacetamidum Solubile'.

Sulphathiazolum Solubile. Prepared as directed under 'Sulphacetamidum Solubile'.

APPENDIX XVII

British Pharmacopœia, 1932, pages 634 and 635; delete Sections A and B and insert the following:—

A. *TESTS FOR PURITY OF VACCINE LYMPH*

(*a*) ***Bacillus anthracis.*** When not less than 0·01 millilitre of vaccine lymph is spread upon the surface of a suitable medium and incubated at 37° for forty-eight hours, no organisms having the cultural, morphological and pathological characteristics of *Bacillus anthracis* are found.

(*b*) *Bacterium coli.* When not less than 0·01 millilitre of vaccine lymph is inoculated into a suitable medium, or spread upon the surface of a suitable medium, and incubated at 37° for forty-eight hours, no organisms having the cultural and morphological characteristics of *Bacterium coli* are found.

(*c*) *Clostridium tetani.* When not less than 0·1 millilitre of vaccine lymph is inoculated into a suitable medium containing coagulated muscle, and incubated under anaerobic conditions at 37° for not less than five days, no organisms having the cultural, morphological and pathological characteristics of *Clostridium tetani* are found.

(*d*) *β-Hæmolytic Streptococci.* When not less than 0·01 millilitre of vaccine lymph is spread upon the surface of a suitable medium containing horse blood, and incubated at 37° for two days, no organisms having the cultural, morphological and hæmolytic characteristics of β-hæmolytic streptococci are found.

APPENDIX XXII

TYPES OF STOMATA

The following descriptions of the stomatal types apply to mature stomata:—

Caryophyllaceous Type—often with two subsidiary cells, lying round the ends of the guard-cells.

Cruciferous Type—often with three or more subsidiary cells, one of which is distinctly smaller than any of the others.

Ranunculaceous Type—with no special subsidiary cells.

Rubiaceous Type—often with two subsidiary cells, with their long axes parallel to the pore.

In describing an epidermis, where certain stomata differ from the predominant type, the term applying to the majority of stomata is used.

APPENDIX XXIII

FLUORIMETRIC ASSAY OF ANEURINE HYDROCHLORIDE

Aneurine hydrochloride is determined by comparing, either by the *visual method* or by the *photoelectric method*, the fluorescence produced by reaction with potassium ferricyanide under standard conditions with the fluorescence produced, under the same conditions, by known quantities of the Standard Preparation of Aneurine Hydrochloride.

The determination is made three times, using separate weighings of the substance being tested, and the average result taken.

1. Standard Preparation of Aneurine Hydrochloride.

The Standard Preparation for Great Britain and Northern Ireland is a quantity of pure synthetic crystalline aneurine hydrochloride kept in the National Institute for Medical Research, Hampstead, London. The Standard Preparation for other parts of the British Empire is the same, except for those countries in which a similar standard preparation, kept in a different institute, has been defined by law; in these countries the standard preparation so defined is used.

2. Unit of Antineuritic Activity (Vitamin B_1).

The Unit of Antineuritic Activity (Vitamin B_1) for Great Britain and Northern Ireland is the same as the international unit and is defined as the specific antineuritic activity contained in 3·125 micrograms of the Standard Preparation. The Unit for other parts of the British Empire is the same, except for those countries in which a similar unit has been defined by law; in these countries the unit, so defined, is used.

3. Details of Method.

A. *Visual Method.* Dissolve not less than 0·02 gramme and not more than 0·1 gramme of the substance being tested, weighed with an accuracy of not less than ± 0·1 milligram, in sufficient *water* to produce 100 millilitres. Mix 20 millilitres of this solution with 100 millilitres of *N/10 hydrochloric acid* and dilute to 1000 millilitres with *water*. Place 1 millilitre of the diluted solution, measured by means of a micro-pipette having an accuracy of not less than ± 0·002 millilitre, in each of two glass-stoppered separators of about 25 millilitres capacity marked 'A' and 'B'. Place 1 millilitre of *diluted standard solution of aneurine hydrochloride FT.*, measured with the same degree of accuracy, in a third separator marked 'C'. Add, to each separator, 2 millilitres of *methyl alcohol FT.* and mix. To separator 'A' add 1 millilitre of *test-solution of sodium hydroxide*, to which one drop of *solution of potassium ferricyanide FT.* has been added, and mix thoroughly. Repeat the process with separator 'C'. To separator 'B' add 1 millilitre of *test-solution of sodium hydroxide* and mix. After one minute, add to each separator 0·5 millilitre of *water* followed by 10 millilitres of *isobutyl alcohol FT.* Shake vigorously for one minute, allow to separate completely and reject the aqueous layer. Pour the isobutyl alcohol extracts as completely as possible into three dry graduated 15-millilitre flasks marked 'A', 'B' and 'C' respectively and dilute to 15 millilitres with *dehydrated alcohol FT.* Take two tubes of non-fluorescent glass, which are alike in the following particulars—the diameters are uniform, the shape of the bottom is the same, the columns occupied by 10 millilitres of liquid are of the same height, and the intensity of fluorescence of 10 millilitres of the same solution of aneurine hydrochloride, treated in the same manner as the *diluted standard of aneurine hydrochloride*, is the same in both. Measure 10 millilitres of the solutions from flasks 'A' and 'B' into two tubes marked 'A' and 'B' respectively. By means of a micro-burette having an accuracy of not less than ± 0·002 millilitre add the solution from flask 'C' to tube 'B',

mixing well after each addition, until the fluorescence in tubes 'A' and 'B' is equal when compared by the following procedure. The comparison is made in a completely darkened room by holding the tubes in front of a mercury vapour lamp enclosed in an opaque case fitted with a window of Wood's glass.[1] The tubes are inclined at an angle of about 60° and rest on a black platform fitted to the Wood's glass window. The observer looks down the tubes, the inspection is not continued for more than a few seconds in order to avoid fatigue of the eye, and the tubes are not exposed to the ultra-violet radiation longer than is necessary. When the two tubes are thought to match, their positions are reversed and another comparison is made. A final confirmatory comparison is made after allowing the eyes to rest for a few minutes in the dark. Precautions are taken throughout the determination against the access of traces of grease which might produce fluorescence. Since the fluorescent solution is unstable in ultra-violet radiation the standard is not used for more than one determination.[2] Before the final comparison, add to tube 'A' a volume of *isobutyl alcohol FT.* equal to that of the standard solution added from flask 'C' to tube 'B'. Each millilitre of the solution added from flask 'C' is equivalent to 0·002667 milligram of the *standard preparation of aneurine hydrochloride*. Calculate the percentage of anhydrous aneurine hydrochloride in the substance being tested.

B. *Photoelectric Method.* Dissolve not less than 0·02 gramme and not more than 0·1 gramme of the substance being tested, weighed with an accuracy of not less than ± 0·1 milligram, in sufficient *water* to produce 1000 millilitres. Mix 20 millilitres of this solution with 20 millilitres of *N/10 hydrochloric acid* and dilute to 200 millilitres with *water*. Carry out the procedure described for the visual method for separators 'A' and 'B', but omitting separator 'C' and using 25 millilitres of *isobutyl alcohol FT.* for the extraction in each case. Take 25 millilitres of each of the extracts and measure the fluorescence in a suitable fluorimeter using as standard the fluorescence produced by treating the same quantity of the *standard preparation of aneurine hydrochloride* in the same way.[2] Calculate the quantity of anhydrous aneurine hydrochloride contained in the 1 millilitre of the diluted solution taken. Subtract from this the quantity of anhydrous aneurine hydrochloride calculated from the fluorescence, if any, produced in the control experiment 'B'. Calculate the percentage of anhydrous aneurine hydrochloride in the substance being tested.

Reagents and Solutions.—The special reagents and solutions are distinguished by the letters 'FT.'

Standard Solution of Aneurine Hydrochloride FT. : Dissolve a quantity of the *standard preparation of aneurine hydrochloride* equivalent to 0·002 ± 0·0001 gramme of anhydrous aneurine hydrochloride, in a sufficient quantity of *N/100 alcoholic hydrochloric acid* to produce 100 millilitres.

Diluted Standard Solution of Aneurine Hydrochloride FT. : Mix 20 millilitres of *standard solution of aneurine hydrochloride FT.* with

[1] If the source of light is strong, an additional filter (Wratten 18A) may be used.

[2] An approximately 0·0001 per cent. w/v solution of *quinine sulphate* in *N/10 sulphuric acid*, standardised fluorimetrically in terms of the *standard preparation of aneurine hydrochloride*, forms a stable fluorescent standard.

8 millilitres of *N/10 hydrochloric acid* and dilute to 100 millilitres with *water*.

Diluted Standard Solution of Aneurine Hydrochloride FT. must be freshly prepared.

Dehydrated Alcohol FT. : of the British Pharmacopœia, free from fluorescence in ultra-violet light.

Methyl Alcohol FT. : CH_3OH, of Reagent purity, free from fluorescence in ultra-violet light.

Isobutyl Alcohol FT. : of Reagent purity, free from fluorescence in ultra-violet light.

Solution of Potassium Ferricyanide FT. : A freshly prepared 5 per cent. w/v solution of *potassium ferricyanide* in *water*.

N 100 Hydrochloric Acid, Alcoholic : Mix 100 millilitres of *N/10 hydrochloric acid* with 250 millilitres of *alcohol (95 per cent.)* and dilute to 1000 millilitres with *water*.

Quinine Sulphate : of the British Pharmacopœia.

CUMULATIVE INDEX

TO THE

ADDENDA

TO THE

BRITISH PHARMACOPŒIA, 1932

The index is arranged according to the alphabetical order of the English names of the official drugs and preparations. The Latin names of the official drugs and preparations, with the exception of Synonyms, are not included in the Index, because the text of the Addendum, like that of the Pharmacopœia, is arranged according to the alphabetical order of the Latin names.

Synonyms appear with cross references.

Italic figures refer to the Appendices.

The Addendum to which the page number refers is indicated by heavy type.

Corrigenda to the British Pharmacopœia, 1932, printed in the First Addendum, are also indexed.

B.P. indicates British Pharmacopœia, 1932.